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LEADING ARTICLES

HYPEREMESIS GRAVIDARUM AND ITS TREATMENT.*

W. H. VOGT, M. D.

ST. LOUIS, MO.

THE reason for presenting this paper to the society this evening is not because I have anything new to say, but simply to call attention to the subject in a general way, and especially to lay stress on a certain mode of treatment, which, although not new, has given excellent results in my hands. Then, again only recently I saw two cases where the induction of an abortion was advised to cure the patient while judicious treatment resulted in a cure, and both cases terminated happily. It is, I believe, a fact, that patients are too frequently advised to have an abortion performed for this persistent vomiting, when really the condition could be controlled in many instances if the physician in charge would only study the case more carefully and not give up if things did not right themselves in a few days.

The patient usually consults the physician in the beginning, on account of the morning sickness, which may not at the time be very severe, but only troublesome. In the great majority of cases the patient is assured that this condition is a natural process, and that after a certain length of time it will disappear of its own accord. On the other hand, if the condition is more troublesome the attendant may prescribe some remedy for her, tell her to take it a certain number of times per day, possibly give a little information regarding her diet, and this as a rule, is the end of his advice. He probably doesn't see the patient again for several weeks, she has confidence in her doctor's advise and hopes from day to day to be relieved of her troublesome symptoms. Soon, however, the condition becomes steadily worse, the morning sickness changes to continuous sickness and vomiting, and while the patient formerly vomited possibly only in the morning and after taking nourishment, she now vomits five and ten times a day, and even oftener. Usually not until the symptoms become alarming is the doctor again called in to treat the patient. It is this class of cases that are too frequently neglected and not given sufficient attention by the physician in general. I believe if such patients were immediately given the proper care, rest in bed, liquid diet, etc., that very few cases would ever become serious.

We do as a rule not give the patient a very careful examination to determine the actual cause of the vomiting and simply take it for granted that the pregnancy is at fault, whereas any number of other conditions are possibly present which may be the cause of the whole trouble.

It is generally accepted that hyperemesis is a reflex condition originating from the uterus and that the sympathetic nervous system is instrumental in carrying the stimulus from the sexual organs to the stomach. If this occurred in every individual pregnancy we might consider it physiologic, but since we know that this is not true there must be something which predisposes to it.

We must therefore not forget to examine for such conditions as:

1. Congenital malpositions and shapes of the stomach, associated with which we generally find other things, such as poorly developed breasts, narrow pelvis, hypoplasia of the external genitals, etc.

2 Acquired malpositions and shapes of the stomach, usually brought about by tight lacing, etc. In these cases, if the condition is marked we oftentimes find a dilatation of the stomach, and consequently a disturbance of the motor function of the stomach.

*Read before St. Louis Obstetric and Gynecologic Society, December 12, 1907.

3. Organic diseases of the stomach, such as carcinoma might bring on severe vomiting during pregnancy.

4. Chlorosis and anemia. Here we frequently find a deficient amount of gastric secretions present, and consequently a number of more or less severe stomach symptoms.

5. Nervous diseases. Gastric disturbances in cases of neurasthenia or hysteria are not uncommon and are frequently associated with pregnancy.

Poor living and improper nourishment frequently predispose to persistent vomiting during pregnancy. We must also not forget those organic diseases, such as nephritis, diseases of the brain, etc.

Of special interest to us are the changes in the sexual organs. Here the nervous system is effected through pressure of a displaced or swollen organ, or through tumors or exudates, or the nervous symptoms are brought about through exposure of nerve endings by means of erosions, ulcerations or through an overdistension of the uterus by means of hydramnios, hydatiform mole or a multiple pregnancy.

There are many theories as to the cause of hyperemesis, and recently the toxine theories have been given considerable attention. In this connection may be mentioned the toxine theory of Dirmoser who claims that toxines form in the gastro-intestinal tract and in order to cure the patient, the stomach and bowels should be regularly irrigated and intestinal antiseptics and physics administered.

Carl Behm, of Berlin, believes that an autointoxication takes place from the periphery of the ovum, i. e., from the membranes and the placenta. He calls attention to the fact that as demonstrated by Ruge, Meyer, Veit, Gottschalk and others, syncytial cells are regularly found in the circulation of the mother. With this regular appearance of syncytial cells in the circulation the frequent occurrence of vomiting during pregnancy also corresponds.

The mode of embedding of the ovum in the uterus also explains the early appearance of vomiting in the first few weeks of gestation. For in the very beginning of the embedding of the ovum an active cell proliferation takes place, the ovular periphery is surrounded by blood and the epithelial covering is so to say soaked in blood, it is then not surprising to find syncytium or even parts of villi washed into the circulation of the mother.

As pregnancy goes on the greater part of the villi atrophy and disappear and the epithelium of these destroyed villi can accumulate and be taken up into the circulation in great quantities, so that we often see, especially at this time, that a case of simple vomiting of pregnancy becomes one of severe hyperemesis. This usually occurs between the third and fifth months of pregnancy.

After pregnancy has advanced still further, when the placenta is completely formed and the destruction of villi has ceased, we then also see an improvement in the condition of the patient and the vomiting and nausea also gradually disappear. This is generally observed about the fifth to sixth month of gestation.

It seems, therefore, that hyperemesis gravidarum is really caused by a syncytial intoxication, whether these toxines form from the destruction of the cells or whether certain biochemic changes takes place in the periphery of the ovum has not been positively settled. If a syncytial intoxication really takes place we could expect a certain reaction on the part of the maternal organism which might render the mother to a certain extent immune. This actually seems to occur, for after a certain time many cases of vomiting of pregnancy get well without any special treatment, and it is less common to see cases of severe vomiting in multiparae than in primiparae, since they seem to possess a certain immunity from previous pregnancies.

This immunity seems to depend upon the time which has elapsed between two pregnancies, for if the intervals are great the immunity seems to be less marked.

Based upon the foregoing theory that the blood contains toxines, whether of syncytial or intestinal origin it seems plausible to attempt to get rid of these by adding something to the blood which will dilute these toxines, and if possible aid other organs, such as the kidneys and sweat glands, in eliminating them. This is done by means of the injections of normal saline solution.

It is of course necessary to correct all contributory causes, such as chronic inflammatory condition of the uterus and adnexa, hydramnios, false positions of the uterus, diseases of the gastro-intestinal tract, of the kidneys and brain, anemia and chlorosis, all of which require special attention.

After all of these conditions have been given their proper care and any hysterical element has been eliminated, the treatment of hyperemesis gravidarum would resolve itself into the following:

The patient is put to bed and kept absolutely quiet both physically and mentally, no food is allowed except iced milk in tablespoonful doses, frequently repeated. Occasionally even the latter is not tolerated by the stomach, and if such proves to be the case all feeding per os is stopped. Every

morning the patient is given a cleansing irri gation of the bowels, and then during the course of the day 3 to 5 quarts of normal saline solution are allowed to flow into the bowel. For this purpose I use an ordinary irrigating can or fountain syringe with the rubber hose, and attached to the end of this tube a large size rubber catheter. The catheter is well lubricated and inserted high up into the bowel. It is necessary to allow the fluid to run very slowly and to give the injections in divided portions. When the bowels are very irritable, it may in the beginning be wise to add 10 to 20 drops of tinct. of opium to about each quart of fluid. In those cases in which the stomach will not tolerate the iced milk we may add a small quantity of milk to the enema fluid.

It is absolutely necessary that every possible precaution be taken in ordering the use of these injections, and unless the patient can have a competent nurse, the physician himself must attend to the irrigations. It is not sufficient to order the patient to have a certain amount of saline solution flow into the bowel, for if no further instructions are given the great majority of cases in which this treatment is tried will not be benefited. This mistake I made in the beginning and wondered why I got no results; however, after giving detailed instructions, in numerous instances. attending to the case myself or having a reliable nurse to attend to them, I found that my results were entirely different and highly satisfactory. The solutions for the enema should be luke warm, and the irrigator should not be more than three feet above the level of the patient, so as not to produce too much pressure. In case the desire for an evacuation takes place the irrigator should be immediately lowered below the level of the body of the patient, and in this way the peristaltic movements are usually controlled very nicely. In case fecal matter should flow back into the irrigator the solution should be poured away and replenished with a fresh saline solution. At times these irrigations require a great deal of patience, both on the part of the attendant and the patient, for it occasionally requires as much as an hour's time for one quart to flow into the bowel, but if carefully done one's efforts are usually crowned with success and excellent results follow.

Since following this mode of treatment I have not used anything else in the line of medication or otherwise, and have seen but very few cases which did not respond to it in a very short time.

In one very severe case in which the bowel was very irritable and would not retain the fluid at all I made use of the saline transfusion under the skin.

The treatment herein described is not new or original with me, but it seems to me has not received sufficient attention by the profession, for patients are still too frequently advised to have abortions performed for hyperemesis when I feel that many of them could find relief from their dangerous symptoms and carry their babe to full term, if this mode of treatment were more generally made use of and the details of its performance given the proper attention.

I do not wish to assert that all cases of hyperemesis gravidarum will recover under this treatment, for there will always be a few cases who are in such very poor condition, whose pulse rate is rapid and constantly climbing higher, and whose general condition would seem to warrant no other mode of treatment save the induction of an abortion. Even in this severe class of cases, if the opportune time for the induction of labor has been allowed to pass, will this mode of treatment give results. If we wish to get results by inducing abortion, the same must be done before the patient has practically lost all her vitality and before the pulse rate rises too high and remains so.

Metropolitan Building.

OPIUM IN THE FRENCH NAVY.—The French naval authorities are attempting to restrict the use of opium by the officers and men which is said to be very widespread, and is alleged as the underlying cause of some of the disasters that have recently occurred on the vessels. It was discovered that in Marseilles users of the drug were obtaining it from a number of dealers in Orienal curiosities, and on searching the shops of the latter several thousand dollars' worth of opium was found and confiscated.

THE NOBEL PRIZES.—Ceremonies attending the distribution of the Nobel prizes, apart from the peace prize, which was awarded at Christiania, took place December 10, in the building of the Academy of Sciences. Owing to the death of King Oscar, there was no public function, and the customary banquet in the evening was omitted. The prize for literature was awarded to Rudyard Kipling; that of physics to Prof. Albert A. Michelson, of the University of Chicago; that of medicine to Dr. Lavrean, of Paris, and the chemistry prize to Prof. Edouard Buchner, of the University of Berlin. All the recipients were present. In addition to the prizes, which this year amount to $38,000, each recipient will get a diploma and a gold medal.

ARTERIA MESENTERICA DISTAL—THE DISTAL MESENTERIC ARTERY.

BYRON ROBINSON, B. S., M. D.

CHICAGO.

(Continued from page 12.)

III. ARCHES OF DISTAL MESENTERIC ARTERY.

In 20 subjects the average number of arches in the distal mesenteric artery was 25, the maximum was 41, the minimum was 12. The arches of the distal mesenteric artery composed by the anastomoses of its branches are charatcerized in general by both maximum and minimum dimensions, by both compact and noncompact anastomosis, multiplicity, and, limited number, marked diameter of anastomatic vessels, pronounced irregularity of form, proximity and nonproximity to the colonic border, by circumscribing definite areas and marking the limits of viscera and serial order from 1 to 3.

The distal arteria mesenterica forms two kinds of arches, viz.: (a) meso-colonic. Arches which conduct the blood to the colon, powerful arches with an astomatic arteries of significant diameters. (b) Peritoneal arches, arches which conduct blood to the membrana peritonei, mesenteric glands and membrana mesenterii propria, arches with anastomic vessels of limited diameter.

The arches are located between the trunk and the "straight terminal vessel" of the colon. The mesocolic are located practically adjacent to the colon rather than the aorta.

In the sigmoid artery the arches are characterized by marked multiplicity and compact, solid arch, conducting a vast volume of blood. The sigmoid artery averaged 10 arches, the maximum number was 16, the minimum was 4.

The arches in the left colic artery are characterized by almost the same qualities (number, dimension) as those of the sigmoid. The left colic artery average 9 arches. The maixmu number was 20, the minimum was 3. The arches in the proximal hemorrhoidal average 5. The maximum was 12. The minimum was 2.

Utility of Arches.—The arches of the arteria, mesenterica distal are composed of significantly large arteries conducting a large volume of blood. The function, physiology, of the distal mesenteric arteries is to direct the blood volume in maximum currents to required localized points of the colon when local function (sensation, absorption, secretion peristalsis) is required precisely similar to the solid anastomosis of the utero-ovarian artery (the genital vascular circle) which can direct a maximum blood current to a localized point in endometrium or endosalpinx to nourish an ovum or neopalsm.

Arches insure uniform distribution of blood volume. If the blood current be obstructed to a territory the arches enable it to be sufficiently supplied by collateral anastomosis.

The mesenterial arches of the tractus intestianils, solidly and compactly anastomosed through inosculating arteries of significant diameters, accommodate themselves to the position and state of distentions and contraction of the tractus intestinalis. Blood initiates, produces function, and when any local intestinal segment required its function exacerbated enormous blood volumes can be concentrated on the desired segment by means of the voluminous mesenteric arches, while other intestinal segments will be supplied with sufficient blood for their tissue nourishment. The mesenteric arches with their significantly diametered, inosculating arteries are doubtless a phylogentic development of the tractus intestinal is these remarkable mesenteric arches with such solid and compact anastomosis through such maximum diametered arteries are an evolutionary development to accommodate function of the tractus intestinalis.

ARTERIAL FIELDS OF THE DISTAL MESENTERIC ARTERY (AREAE ARTERIACAE.)

The branches of the distal mesenteric artery form characteristic arches on the dorsal wall which circumscribe definitive or independent fields. The arterial arches project the peritoneum ventralward, and in this fold may be felt the pulsating artery. These arterial fields are so arranged that positional relations of viscera may be established and a knowledge of the arterial field may be utilized for localization of viscera during peritonotomy. Arterial fields are only of practical worth on the dorsal abdominal wall. The arterial fields (arches) are of less practical value in the areas of mesenteries of maximum length and mobility. However the "ileocolic circle" and the arch of Riolan and Haller will always demand the most careful respect in intestinal surgical procedures. They are arterial fields of practical importance. If the colon transversum be reflected proximalward the great field of the Riolan-Haller arch is visible—the right, the lesser and the left the greater (see Figs. 38, 41, 42, 23, 27, 28). The arterial field of the Riolan-Haller arch is reduced, divided when an arteria transversa accessoria is present. The artery of Waldeyer is present sufficiently frequent to consider it constant in surgical procedures.

The left side of the Riolan-Haller arch is the arterial field which concerns the distal

mesenteric artery, it is the renal field, area renalis sinistra. In my opinion the renal field is the only one of practical value among the arches of the distal mesenteric artery. Prof. Wm. Waldeyer, the prince of applied anatomy in Germany, adds the ureteral field, area urterica sinistra; however, I am unable to view it as of practical value during peritonotomy. The arterial fields are the most pronounced in space in infants. In the left renal field may also be found not only the left kidney but the adrenal, a large segment of the ureter, a portion of the gastrium, pancreas and spleen. The sigmoid arches present no recognizable, established arterial field.

Frequently the left renal arterial field includes the distal portion of the kidney only, especially in adults.

In maximum arterial fields with minimum panniculuadiposus the center of the field may be so depressed that it appears like an inverted dome. The peritoneal border of the arterial field appears markedly projected like a ring, with the artery coursing in its circumferential fold which in pronounced spare subjects produces the appearance that the artery possesses a kind of mesoangium. The arterial fields, arae artericae, may not be observed only but palpated also.

IV. STRAIGHT TERMINAL VESSEL OF THE DISTAL MESENTERIC ARTERY.

(vas intestini terminale rectum, colon.)

Surgery is the father of anatomy. Practical and experimental surgery demonstrate that the "straight vessel" of the disal mesenteric artery is the most significant of all its segments (trunk, branch or arch). The "straight vessel" is the safe location for the application of the ligature, but especially the powerful crushing clamp. Its ample length avoids ligation or clamping of the mesenteric arches which might initiate colonic gangrene or ulceration of colonic mucosa. The "straight vessel" of the distal mesen-

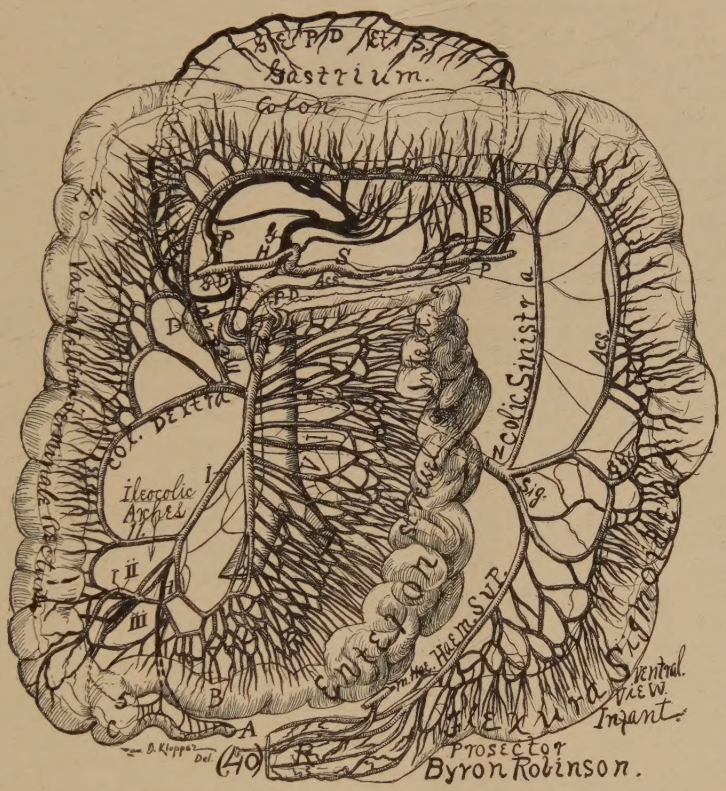

Fig. 6 (40).—Presents the trunk, branches, arches and "straight terminal vessel" of the distal mesenteric artery. The trunk trifurcates into arteria colica sinistra, arteria sigmoidea and arteria hemorrhoidalis proximal. Note in the distal mesenteric artery the number, form, dimension (length and diameter), location, relation, characteristic and topography of the branches and arches. The bilaterally duplicate major mesocolic circles, including the renal and pancreatic fields are observed by the enteronic loops. Observe in this illustration two kinds of arches, viz: (a) mesocolic and mesenteronic arches, the duty of which is to furnish blood to the enteron and colon. (b) intermesenteronic and intermesocolic arches (black lines in the figure), the function of which is to nourish the membrana peritonei, membrana mesenterii propria and mesenteric glands. Ample numbers are drawn in this figure to illustrate their location and characteristics. Note the network that the intramesenteronic and intramesocolic arches weave within the "ileocolic circle," in which are the vessels atrophy, mesenteric apertures may occur and intestinal loop may become strangulated. An arteria colica transversa accessoria or Waldeyer's artery exists (marked in the figure scs). The two black arteries dorsal to the transverse colon represent the two gastric circles. Waldeyer's artery divides the giant Riolan-Haller arch.

teric artery is located between the peripheral mesocolonic arch and them esocolic border.

The dimension (length and diameter) of the "straight vessel" of the distal mesenteric artery is of ample length ($\frac{1}{2}$ to $1\frac{1}{2}$ inches) through its entire distribution to be ligated or preferably clamped with powerful pressure forceps without molesting colonic wall or mesocolic arches.

There are two kinds of "straight vessels" at the periphery of the distal mesenteric artery depending originally on the presence or absence of the appendix epiploicus.

There is: (a) The "long straight vessel" which extends from the mesocolic arch to the colon and eventually in the interior of the appendix epiploicus to supply its tissue. The "long straight vessel" will perhaps average one to the inch and is one-third greater in dimension (length and diameter) than that of the "short straight vessel."

There is: (b) the "short straight vessel" which extends from the peripheral mesocolic arch to supply the dorsal and ventral colonic wall. The "short straight vessel" will perhaps average four to the inch, and is one-third less in dimension (diameter and length) than that of the "long straight vessel."

The "straight vessel" of the distal mesenteric artery differs in characteristics, number, dimension in the three different distal colonic segments—left colon, sigmoid, rectum.

A general characteristic of the "straight vessel" of the distal colon is that it emerges from the arch as a single trunk and bifurcates with equal volumes or unequal volume. If the bifurcation be of uniform branches they extend either all to one surface of the

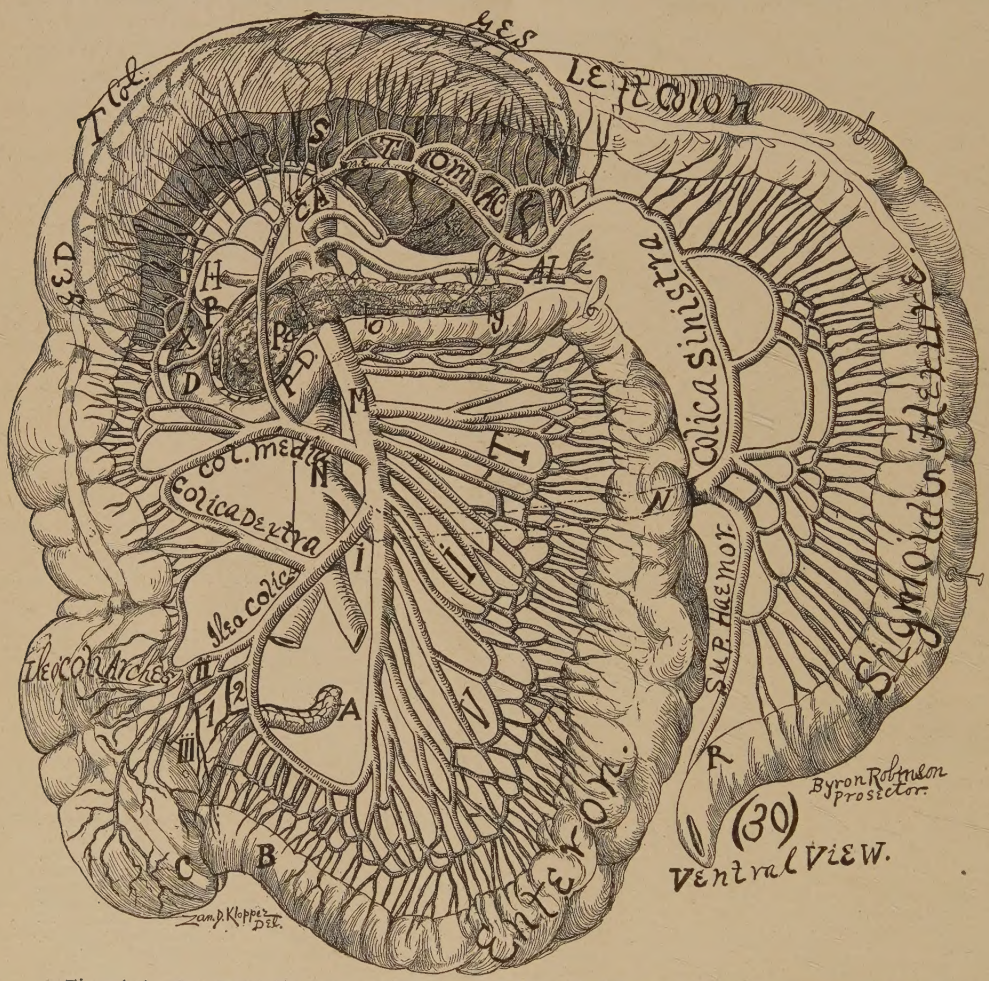

Fig. 7 (30).—Represents the trunk, branches, arches and "straight terminal arteries" of the distal arteria mesenterica. The trunk emerges from the aorta proximal to the bifurcation of the trunk of the proximal mesenteric artery. There is no Waldeyer's artery to divide the giant Riolan-Haller arch. The "ileocolic circle" is distinct and the free end of the appendix lies in it. Four factors are present in this illustration' viz.: 1. "Ileocolic circle" enclosed by the ileel and ileocolic artery. 2. "Straight terminal vessel." 3. Ileocolic arches. 4. "Concentric gastric circles."

colon or some extend to the dorsal, and some the ventral surface of the colon.

If the bifurcation of the "straight vessel" result in unequal diameter in its branches all the branches may extend to one surface of the colon or divide, some supplying the dorsal and some to the ventral colonic surface. If one branch of the bifurcation be of markedly less dimension than the other the smaller branch not infrequently spiral rotates about the larger. The distal mesenteric artery possesses a spiral state. The "straight vessel" may arise from the median surface of the "mesenteric arch" and pass lateralward to the colon by coursing dorsal or ventral to the arch. In general the "straight vessel" originates from the circumference of the mesenteric arch most adjacent to the colon, however, occasionally it originates from a mesenteric arch located more medianward, adjacent to the trunk. The characteristics of the "straight vessel" of the left colon are: It is of sufficient length for ligation or clamping without danger to the mesocolic arch or colonic wall. Not infrequently the arch of the arteria colica sinistra lies in contact with the left mesocolic border or on the ventral surface of the left colon (see Figs. 38, 37, 35, 32) lending the appearance that the "straight vessel' was absent. However, the "straight vessel" is not absent and by tension in opposite direction on the arch and left colon the straight vessel" becomes evident. Slight blunt dissection will expose ample lengths for ligation or clamping. Should the arch of the arteria colica sinistra be ligated it

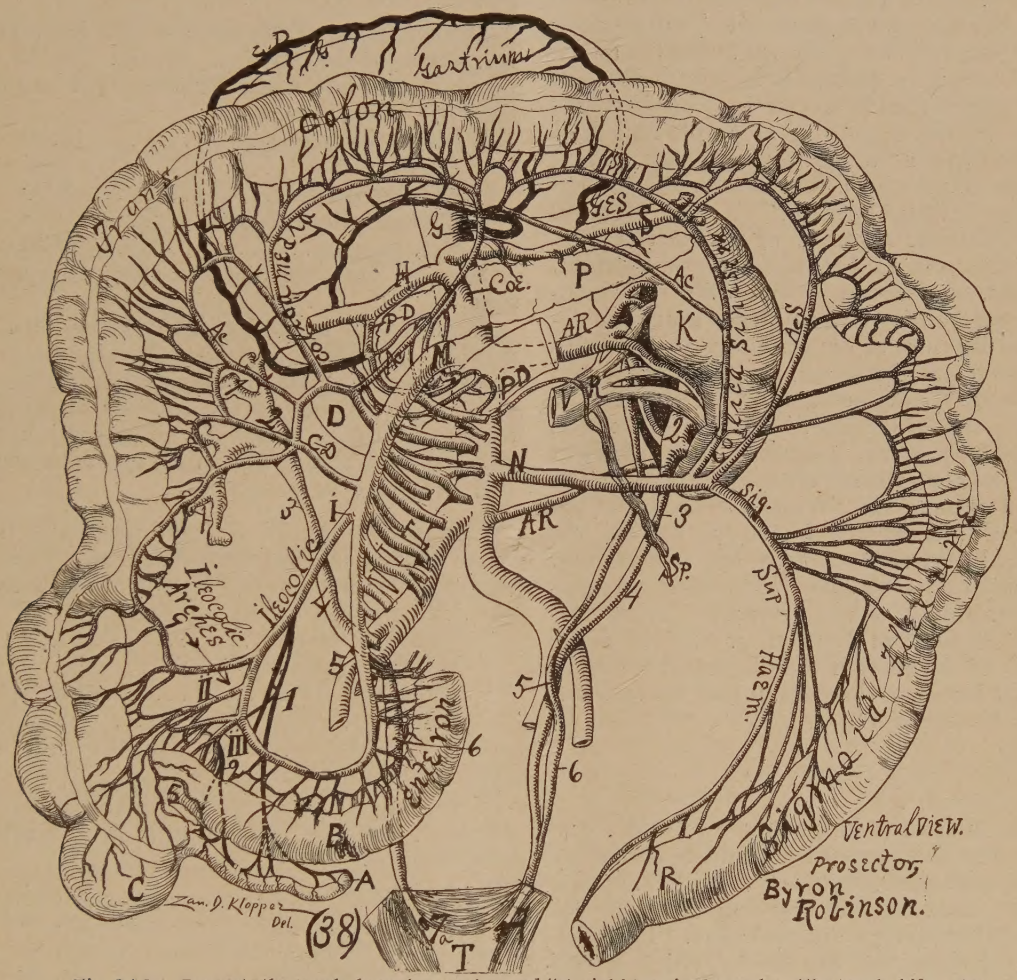

Fig. 8 (38).—Presents the trunk, branches, arches and "straighl terminal vessel." The trunk bifurcates. Observe in the distal mesenteric artery the number, form, dimension (length and diameter), location, relation, characteristic and topography of the branches and arches. The bilaterally duplicate major mesocolic circles lare manifest. The distal bilateral major mesocolic circles circumscribe the renal fields. The illustration explains itself. A Waldeyer's artery divides the Riolan-Haller arch. This illustration presents portal duplicity on the left. Observe the excessively long trunk. Four factors are of interest, viz.: 1. "Ileocolic circle" from the right circumference of which emerges the arteria appendicularis. 2. "Straight terminal vessel" of ample length (½ to 2 inches) to be ligated or clamped. 3. Ileocolic arches. 4. The concentric gastric circle (reflected proximalward).

might be a segment of the Riloan-Haller arch and be accompanied by the disaster of colonic gangrene or colonic ulceration. The "straight vessel" located in the bifurcation of the branches of the arteria colica sinistra frequently present marked length and diameter.

The straight vessel" of the arteria sigmoidea is greater in number, but less in dimension than those of the left colicartery. In short, the "straight vessel" except perhaps those supplying a short segment of the distal ileum, the sigmoid posssses the "long straight vessel" and the "short straight vessel" similar to other colonic segments in which the appendix epiploicus is situated. The "straight vessel" of the sigmoid is of ample length (½ to 1½ inches for the ligature or clamp. More vigorous blunt dissection is required to expose the "straight vessel" in the sigmoid than in another segment of the colon an account of maximum tissue in the mesosigmoid. However, on account of the solid and compact anastomosis of the sigmoid arches an accidental ligature or clamping of a messosigmoid arch would probably not jeopardize the vital integrity of the sigmoid.

The "straight vessel" of the proximal hemorrhoidal artery resembles the "straight vessel" of the arteria colica sinistra, in number and dimension. When the arches of the proximal hemorrhoidal artery ceases the "straight vessels" emerge from branches, produced by its repeated bifurcation, in regular order and at equal intervals, being frequently of marked dimension. At the distal portion of the rectum the "'straight vessel" unite in loops on the dorsal and ventral surface of the rectum

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Lemons Are a Medicine.—The Missouri dealer who was arrested for selling lemons on Sunday and convicted for violating the Sunday law, appealed his case and won on the ground that lemons are medicine. The court had to decide the degree to which a substance must be used as a medicine in order to be classed in that important list of articles.

Consolidation of Two Louisville Colleges.—The combination of the Louisville College of Medicine and the Hospital College of Medicine went into effect on January 1st. Dr. L. S. McMurtry is president of the new college; Dr. C. W. Kelly is dean of the faculty, and Dr. W. F. Boggess, associate dean. The institution is known as the Louisville and Hospital Medical College, Medical Department of the Central University of Kentucky.

FAVORITE PRESCRIPTIONS

To Remove Moles.—

℞	Red mercuric oxid.....	drs. 3
	Nitric acid.....	drs. 2½
	Water.....	dr. 1

Make a solution. Keep in a glass stoppered bottle. Bathe the surface around the mole with oil or with vaseline and apply one to two drops of the solution to the mole. Let it dry.—Ellingwood's Ther.

Formula for Diarrhea.—Dr. J. J. Taylor, editor of the Medical World, thinks so much of the following formula that he publishes it every year:

℞	Bismuthi subnit.....	16.00
	Pulv nutmeg.....	8.00
	Powdered chalk.....	8.00
	Zinc sulphocarbolate.....	0.75
	Syr. ginger.....	90.00

Mix. S. One teaspoonful after each passage.

This makes a good thick mixture which is not unpleasant to take. Physicians who wish to carry their medicine will find it con venient to substitute the powder of ginger for the syrup. If syrup be objectionable substitute for it tincture of ginger with water and mucilage of acacia.

Chordee.—Dr. W. J. Robinson says that when chloral is contraindicated, the following capsules have never failed in his hands:

℞	Ext. rhamni purshianae....	gr. ij
	Codeinae phosph.....	gr. ⅓
	Heroini hydrochlor.....	gr. $\frac{1}{12}$
	Lupulini optimi.....	gr. iij
	Camphorae monobrom.....	gr. ij

Misce et fiant capsulae. Signa: Take one capsule before retiring.

Sometimes suppositories prove the most efficient, and the following is an excellent combination:

℞	Atropinae sulph.....	gr. $\frac{1}{120}$
	Codeinae phosph.....	gr. ss
	Antipyrinae.....	gr. v
	Ol. theobromae.....	gr. xv

Misce et fiat suppositorium no. j. Dentur tales doses no. xij. Signa: Insert one before going to bed; another may be used during the night.

To relieve the actual attack, the patient should wrap a cloth or towel wrung out of ice-water about the member, or put it in hot water, as hot as can be borne. If the desire to urinate is present at the same time with the chordee, the patient should urinate in the water. Swallowing pieces of ice has relieved many of the author's patients, but whether suggestion plays a part here is hard to determine.—Critic and Guide.

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OFFICIAL TRANSACTIONS.

PRESENTATION OF PATIENTS.

J. WILBUR SHANKLAND, M. D.

ST. LOUIS,

Assistant Superintendent.

A CASE OF MULTIPLE BOWEL PERFORATIONS DUE TO GUNSHOT.

GENTLEMEN: I wish to present for your consideration and discussion this young lady, M. S., age 18 years, weight 115 pounds, who came to this institution the night of October 3d, having a self-inflicted gunshot wound of the abdomen which had occurred about an hour and a half before her arrival.

Patient was intoxicated, vomiting, skin was warm, was conscious; pulse 96, respirations 36, temperature 99. Her abdomen was rigid and slightly distended and tympanitic. She had a penetrating gunshot wound of entrance located one and one-half inches above and one and one-half inches to the left of the umbilicus. The bullet ranged to the right, taking a slightly upward and backward course, no exit wound being found. X-ray shows bullet between eleventh and twelfth ribs on the right side near the vertebral column. The area about entrance was slightly powder burned, revolver having been discharged at very close range.

The stomach as lavaged, though no blood was noted in the previous vomitus, and considerable, thin, stringy material was secured, having a very offensive odor of liquor. Six ounces of urine were taken from the bladder per catheter, which was clear containing no blood, no casts, and a small amount of albumin having a specific gravity of 1008. Patient was prepared for immediate operation.

Median incision made, extending from a point to about two and one-half inches above the umbilicus to a point about two and one-half inches below. The belly wall at this point was very thin. The muscles in the upper portion of the incision were much discolored where the bullet had passed through them.

When the abdomen was opened no fluid escaped. Peritoneum was in good condition. The omentum had been punctured, but no vessels ruptured. The omentum was removed from the cavity, and thoroughly examined. Large intestine was then gone over thoroughly—first the ascending, then the transverse, then the descending colon. No perforations could be found. The stomach was not examined, as the direction of the bullet and the location of the entrance wound indicated that it was not injured.

After returning the colon and omentum to the abdominal cavity, the small bowel was picked up at the angle of Treit's, and about two feet below this point were found two perforations opposite one another. These were closed temporarily with clamps and covered with gauze, preventing leakage. Continuing the search down the bowel for another space of about three feet, was found a similar injury. Still further below, about two feet, was found one perforation of the bowel and one of the mesentery of the ileum. Below this point, about four feet, was another double perforation of the ileum. The remaining small bowel between this point and ileocecal valve was found uninjured. The appendix free, small, not molested.

The two lower injuries were closed, first by the use of a running stitch of silk, reinforced by a Lembert suture. This lessened the lumen of the bowel until it was not much larger than a lead-pencil in diameter. On making a test, it was found that the bowel contents could pass easily but not freely through this opening. The perforations above this point were each closed by first trimming the mucous membrane which extended beyond the peritoneal coat and then invaginating by the use of the purse suture. This was reinforced by four stitches in the peritoneal and muscle coats. This method of closure, where double perforations were present transversely opposite each other, left a much larger lumen to the bowel and just as firm closure of the perforation.

Mesentery was injured near the third bowel perforation (counting from above) and was hemorrhagic for a triangular area about two inches in length at the base. The healthy edges of this mesentery were approximated by stitching with fine silk, thus making a

fold over the hemorrhagic portion and preventing any tearing of this weakened area of mesentery by the peristaltic action of the bowel.

After closure of all perforations, seven in number, the bowel was returned to the abdominal cavity. The liver was examined carefully, and no injury could be found. The gall bladder was well distended. No gall-stones palpated. One gauze drain was placed in the fossa in this area, coming up through the median incision. The spleen was then examined, and found to be of normal size and hard. No injury. Gauze drain was placed over in the splenic fossa and brought up through the median incision. Examining the pelvis, both ovaries were small and hard; right Fallopian tube seemed normal in size and consistency, the left was considerably enlarged and was rather tense. It was not disturbed at this time.

An opening was made just above the bladder through the thinner portion of the abdominal wall, and a glass tube inserted which extended into the pelvis. Small gauze drain in the bullet wound of entrance. This completed the system of drainage. The abdomen was flushed with hot saline solution. Wound was closed with through and through silkworm gut sutures. Dry, sterile, gauze dressing used.

Patient left the table in comparatively good condition. Placed in bed. Rectal irrigation started next morning, using a copper, controllable irrigator which regulates the flow of the solution and retains the heat at the desired degree.

Convalescence and Treatment.—This patient has had no rise in temperature, excepting two days, the first and the second, and the recovery was uninterrupted and rapid. She was up at the end of the second week, assisting about the division the third week; discharged the fourth week.

Complications.—Following operation, the patient vomited at varying intervals for four days. Vomitus was mostly bile-stained mucus, having no fecal odor and distressing the patient very little. This was accounted for by the statement made by the patient, which was that this condition always followed a drinking spell, and that she was subject to gastritis. No sooner had the vomiting ceased, and the patient gotten well rested, than she was seized by severe abdominal cramp with rigidity of the abdominal muscles and a pinched expression, which for a time looked like an oncoming peritonitis, but on the beginning of her menstruation, which occurred at this time, she was relieved somewhat, and as the menstruation continued, the pain gradually disappeared and left entirely about three days later.

Drainage.—The glass tube was drained as follows: At 11 a.m. on the day following the operation, 20 cc. of dark-red fluid were drained from the tube. The saline left in the abdomen had been all absorbed. At 7 p.m. of the same day, 14 cc. of the dark-red fluid, containing some clot, were taken from the glass tube. On October 5th, at 11 a.m., 12 cc. of dark-red fluid were taken from the tube, and at 3 p.m. 10 cc. of a thin, serous fluid were taken from the tube. At this time, a small cigarette drain was placed through the tube and the tube removed, the tube slipped over and the cigarette drain allowed to remain. This drain was removed about one and one-half inches a day, until all was out.

Gauze drains in the different fossae were removed, a good amount each day, and on the third day they were entirely removed, replaced by small gauze drain just through to the peritoneum. Stitches were removed at the end of the seventh day. A small drain in the bullet wound of entrance, which was changed daily, brought out a small amount of infected material each time. This lasted for a few days only.

Treatment—Just before the operation, stomach was lavaged, and six ounces of normal urine removed from the bladder. The patient was given one-fourth grain morphine sulphate upon arrival at the institution, and ten ounces of ether during the operation.

After the first day in bed, continuous irrigation was discontinued, and alternate saline and nutrient enemas give every three hours during the second and third days. During the first three days, while vomiting continued, she was given carbolic acid two drops, cocaine muriate four per cent, ten minims three times daily.

Diet.—Egg albumin given on the third day, drachm every two hours for six hours, and then, as it was retained, it was given in larger quantities and more often. On the fourth day, was given the albumin as before. Custard and milk on the fifth day. Toast and milk on the sixth day. Peaches and cream were craved for by the patient, and she was allowed to have a small amount to satisfy her. After this she selected her own diet, excluding any great quantity at any one time.

Temperature and Pulse.—The highest temperature was reached on the second day after the operation, which was 100 F. This lasted through the third day, and after that stood 99 deg. for one day, after which was normal or about one-half degree above.

In this case there was no bowel movement until the third day, which followed a laxative enema. The stool was thin and watery. The following two days the bowel moved well, all stools being brown, thin and watery. No trouble after this period with the bowel until the third week, when she complained of constipation. Stools were well-formed and firm. At the end of four weeks, the patient was discharged.

The rapid recovery and good condition of this patient after passing through such an operation was due to the many things occurring in her favor, viz.:

1. The location of perforations in the small bowel.
2. The comparatively empty condition of the bowel.
3. The small amount of bowel contents that escaped into the peritoneal cavity.
4. The hemorrhage being slight.
5. The age and vitality of the patient.
6. Absence of shock.
7. The early repair of the bowel.
8. Thorough drainage.
9. Perfect closure of perforations and close observance of operative technique.
10. The desire and determination of the patient to recover.

This case demonstrates the efficiency of the purse-string suture for bowel work where the lumen is liable to be greatly lessened, and, at the same time, that a lumen the size of a lead-pencil or smaller will answer for the passage of bowel material in the ileum, remembering its power of distension.

DISCUSSION.

Dr. Dean.—This is certainly very interesting. The outcome of the case is certainly due to the time when the patient was operated upon. If this patient had been operated upon five or six hours later the outcome would certainly have been different, for probably peritonitis would have set in. In regard to flushing, I think it should never be neglected at whatever time we get a case. Thorough flushing should be adopted in all cases, whether taken early or late. The trouble in those cases taken late is that there are adhesions and the flushing is necessarily not thoroughly done. I think, too, that a case should be thoroughly drained. Where we are in doubt it is a good plan to put a glass drain in the pelvis. Another thing is the position of the patient. There is a strong impression now that patients after operation shoud be placed on the Fowler position. There is no doubt that much of the fluid thus gravitates to the pelvic cavity, but what seems to me more satisfactory after the evacuation of an abscess anywhere in the abdominal cavity, is to put the patient on the abdomen, so that in drainage we get the full effect of gravity. Drainage is not due to the fact that there is an opening there, free drainage is due more to the muscular action and gravity forcing the fluid out of the opening. With the patient on the abdomen with the head high the drainage is far more complete. It is necessary in these cases first, to get the patient early, to flush the abdominal cavity thoroughly and the establishment of thorough drainage with the patient in the proper position. This case is one of extreme interest, and the doctor should be congratulated on the result.

Dr. Lippe.—About the coaptation of this mesentery because of the possibility of a slough. If a slough had occurred there would have developed a peritonitis even though the good portions of the mesentery had been brought together.

Dr. Shankland.—I did not really expect a slough. The stitching of the mesentery forming a covering over the hemorrhagic area, which was weakened by the perforation and the hemorrhagic infiltration, would make it much less apt to receive any force, either by twisting or stretching during the peristaltic action of the bowel. And if this weakened area should be torn or ruptured by the action of the bowel, either by its distention or peristaltic waves it might lead to necrosis. The area looked slightly suspicious as to its power or recovery, but I felt safe with the precaution of surrounding it by sound tissue, and protecting it from any injury due to mechanical force that it would certainly be all right. Any great strain on this area might cause more hemorrhage between the two layers of peritoneum covering the mesentery, and then if the clot would not be absorbed and should rupture into the general peritoneal cavity it would be very likely to cause trouble. The precaution of attaching a small drain to this area with one stitch of small catgut would drain such matter as might form from any cause. This precaution was not taken because I did not expect a slough.

Dr. Lippe.—But the circulation in the rest of the mesentery must have been good or you would have had a slough.

Dr. Shankland.—In these cases we have to do the best we can and take the chances, and I thought this would be better than nothing to protect or help to shield the area from further injury.

Dr. Homan.—As I understand it, the perforations were through and through, clean. Suppose half of the bowel had been cut

away instead of having been hit squarely. How would you have closed the wounds then?

Dr. Shankland.—If the bowel had been perforated opposite the mesentery, I would have stitched over, first with a running stitch, and used a Lembert as reinforcement, i.e., if the injury was not too extensive. When a laceration occurs at, or near the junction of mesentery with the bowel, which cuts off the blood supply of bowel, then a resection is certainly indicated.

CASE OF MULTIPLE STAB WOUND OF THE CHEST AND ABDOMEN, WITH PROLAPSE OF VISCERA.

Walter C. G. Kirchner.—This patient is a steamboat man. He came in in the afternoon with a history of having been stabbed. He had a wound in the chest and through this wound a loop of bowel, perhaps a foot in length, protruded, and this loop was cut in two. The left rectus was cut across transversely and in the left flank was another wound. Through the lower opening the stomach prolapsed. We made an incision through the left rectus muscle, making a triangular flap. The small bowel was brought through an opening in the diaphragm. Resection was made and anastomosis with the Murphy button. The stomach was then delivered into the abdominal cavity and the opening in the stomach was then closed over with purse-string sutures. The diaphragm was then brought down and sewed over, first muscle to muscle and then covered over as well as possible with peritoneum. This man was in very bad condition. He was bleeding freely and I did not take time to flush. When the injury is high there is less probability of infection, but when the large bowel is injured there is more severe infection. We drained pus from this lower wound. He has now an infected pleural cavity. The rectus muscle was sewn end to end with catgut. I simply presented this case as a curiosity. The man was practically eviscerated. He had repair of the belly wall, a repair of the stomach, an intestinal resection with anastomosis with the Murphy button and a repair of the diaphragm.

DISCUSSION.

Dr. Dean.—About the incision in the chest. The work on the stomach, of course, is something that is often done, but the repairing of the diaphragm is worthy of notice. It is interesting to note how seldom we get a stab or gunshot wound of the chest but what we get an infection. It shows how much less resistant the pleura is than the peritoneum.

The President.—I always think it best to have dependent drainage, but we must weigh our cases as they come along and it is a great deal better to do what we did in this case than to prolong the operation with the possibility of a fatal outcome. If I had drained posteriorly there would have been natural drainage.

OPSONIC INDEX AND ACTIVE IMMUNIZATION

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In the establishment of a bacterial disease several factors participate. The infecting organism must be virulent and present in sufficient numbers in the proper part of the body and the natural barriers offered to disease by the host must be overcome and the host must be susceptible to the action of the specific organism.

This susceptibility or non-susceptibility is dependent upon immunity which may be natural or acquired. Acquired immunity again may be active or passive. Active immunity results from undergoing a natural or modified course of disease, while passive immuniy is an immunity which results because of the injection or taking into the body of what is known as an anti-body. This anti-body comes from an actively immunized animal.

A number of hypotheses have been advanced to explain the changes that occur in the bodies of animals in immunization. Two main views, however, have developed as to the nature of the same.

The French school has been led by Metchnikoff, who in 1883 stated that the leucocytes engulf and destroy bacteria, and thus form a defense to bacterial infection. The Germanic school of which Ehrlich is the leader has assumed that the body fluids, especially the blood serum, contain substances that will destroy bacteria or their toxins. According to Ehrich's views anti-bodies are formed and the leucocytes play only a secondary role in immunity.

Denys and Le Clef in 1895 first called attention to the fact that the serum from an immunized animal causes leucocytes to become phagocytic to the corresponding bacteria. They concluded that immunity is due to either anti-toxic or anti-microbic, and also to the action of serum on leucocytes, causing them to become phagocytic.

In 1903 Wright and Douglas found that in an immune serum there is a substance that acts on the bacteria and prepares them

for phagocytosis. This substance they called "opsonin," which acts on the bacteria and not on the leucocytes. The work of Wright and Douglas was stiring, especially as they used methods or the quantitative determination of phagocytosis. Their method, however, is only a modification of that first proposed by Leischman in 1902. The procedure is as follows: a mixture is made of the serum to be tested, a suspension of the organism in question and lucocytes. This mixture is incubated a definite period of time, and is then spread in such a way that most of the leucocytes are found in one end of the slide. The slide is then fixed and stained, and the average number of bacteria in a number of leucocytes is determined.

The average number of bacteria per leucocytes is called the "phagocytic index." The phagocytic index, when serum from a patient is used, is compared with the phagocytic index obtained by the mixture of the same bacterial emulsion and leucocytes, and the serum from what is considered to be a normal individual and the result obtained is called the "opsonic index."

In 1904 Neufeld and Rimpau, independent of Wright and Douglas, based on experiments stated that immunity is due to anti-toxic, anti-microbic and "bacteriotropic" substances. The bacteriotropic power, according to these investigators, is due to something in immune serum that acts on the bacteria, and that because of this action bacteria can be engulfed by leucocytes.

Neufeld and Rimpau's work, however, received little attention while Wright's methods and work have become very well known. Wright found that the opsonic index varies from time to time, and that when bacteria killed by a temperature of 60 deg. C. are injected subcutaneously, the index first falls, and later, due to the stimulation of the cells of the body, rises again. Inasmuch as the injection of killed cultures causes both an immunity and a rise in the opsonic index, Wright assumes that immunity is due to the action of opsonin in the blood; and on this he bases his ideas of immunization and treatment of bacterial diseases, for which he reports most favorable results. Because of these reports and of his positive statements, the uninformed have given Wright the credit for the discovery of the treatment of bacterial diseases by killed cultures. Many have gone so far as to speak of this method as "treatment by opsonins." Looking over the literature, however, it is found, that already in 1880 Pasteur produced immunity to chicken cholera by the injection of killed cultures of the organisms causing that disease. Haffkine has for some years used this method in cholera, and Wright himself immunized to typhoid fever with killed typhoid bacilli. From this it is evident that the injection of killed bacteria to produce immunity, antedates the discovery and the determination of opsinins.

By the determination of the opsonic index Wright has diagnosed diseases and has employed it as an indication for the injection of killed cultures. He finds, as Ehrlich had found for tetanus antitoxin and Solomonson and Madsen for diphtheria antitoxin, that for opsonins there develops after the injection of killed cultures, first a negative phase and then later a positive phase. The rise in opsonic index or positive phase he finds, occurs from 48 to 72 hours atfer injection, and persists from five to fourteen days. Wright further states that at times this positive phase does not occur, and a second injection under these conditions will lower the index still more; on the other hand, by injecting bacterial vaccines during the positive phase he raises the index still higher. On this he bases his interspacing of injections of vaccines. It must, however, be noticed hat rarely does he get an opsonic power higher than 30, which is entirely out of keeping with the amount of recognized protective substance produced by immunization.

CRITICISMS OF WRIGHT'S OPSONIC INDEX AND VACCINATION BASED ON OPSONIC INDEX DETERMINATIONS.

In various parts of this country at medical society meetings papers have been presented on the determination of the opsonic index and the so-called "opsonic treatment" of bacterial diseases. Many articles have appeared in our medical journals, a new terminology was even suggested at one of the scientific meetings. The results at first reported were most favorable and a new era in medicine had begun. Some were attracted to this subject because of the great things the method promised, others thought of financial gains, and it was proposed that each hospital have a so-called "opsonologist." In the last year, however much unfavorable criticism has been made in regard to Wright's teachings. I have undertaken a study of the opsonic index in various diseases but especially in erysipelas and treatment of this disease by the injection of killed streptococci. The results have been far from satisfactory the criticism being directed along two lines namely: (1) the unreliability of the determination of the opsonic index and (2) the uncertainty to the influence of vaccinal treatment upon the opsonic index.

1. *The Determination of the Opsonic Index.*—Before the opsonic index can be used

as an indication for the administration of vaccines it is necessary to establish the reliability of the determination of the same. The method I have used is the one universally adopted and used by Dr. Ross, who had been with Prof. Wright for two years. Investigations have been made as to the reliability of this method, and it was found in the first place, that on the same slide there was at times a considerable difference in the phagocytic index as determined by the first or second one hundred leucocytes examined. Again, it was found that two investigators with the same sera, same bacterial emulsion and the same leucocytic cream might get entirely different indices. Most striking, however, was the great variation in the index of normal individuals. Using the same suspension of bacteria and the same leucocytic cream the phagocytic indices with the sera of the same ten normal individuals varied from 4.91 to 9.48, according to one observer, and from 4.37 to 7.63 to another. Wright recognized the difference in normal sera and to obviate this he pools the normal sera. Then in determining the opsonic index he compares the phagocytic index when the patient's serum is used to that obtained when the pooled serum is employed. Based thus on opsonic index he decides as to when the infected individual is to receive bacterial vaccines. The unfairness of this is evident when it is realized that some of the apparently individuals may have a lower opsonic index, as determined by comparison with the pooled serum, than the patient who is to receive the injection of the bacterial vaccines. It is thus apparent that simply because an individual has a bacterial infection his blood serum cannnot be added to the pool, and his opsonic index is determined, and usually he receives an injection of the bacterial vaccine. The same unreliability of the determination of the opsonic index has been found in other laboratories, epsecially at the laboratories of Dr. Park of the New York Board of Health, and at the laboratories of the Johns Hopkins Hospital where Drs. Cole, Meakins and Moss have carefully studied this problem. Men trained at Prof. Wright's laboratories can do better than the investigators in this country. Visitors to Prof. Wright's laboratories say that Prof. Wright himself no longer uses the opsonic index as an indication for the injection of bacterial vaccines.

2. *Opsonic Index as Influenced by Injections of Bacterial Vaccines.*—The injections of killed culures of micrococus pyogenes aureus or albus, sterptococcus pyogenes and the other micro-organisms have not produced with any regularity the effects on the opsonic index that Wright claims to obtain. Conditions entirely removed from specific bacterial processes influence the index considerably. In erysipelas no constant change was observed as regards desquamation, migration, recurrence or cure.

RESULTS OF BACTERIAL INJECTION.

As was stated before, killed cultures have been used in active immunization from time to time. Later this method has been applied to the treatment of existing bacterial injections. If a patient with a furuncle due to an infection with micrococus pyogenes aureus is injected with, say 300,000,000 killed cocci, the furuncle usually will soon subside. The opsonic index is supposed to rise and does so in many cases. After about five days it begins to fall and the patient, according to Wright's method, receives another injection of the same organisms. The following the second injection a new furuncle may appear, and frequently does so. Then injection of killed cultures is one of the methods employed to experimentally induce active immunity, but the reappearance of the furuncle is a sign that immunity has not been established. Wright would explain the formation of the furuncle by saying the second injection causes a negative phase and lowers the opsonic index so that the organisms present can again cause a furuncle. But are the opsonins the only protective substances? Antitoxins, bactericidins and agglutinins when present are known to afford protection to bacterial diseases. Bacterilysins are found to be present in the spleen twenty-four hours after injection of culture, they do not, however, appear in quantity until five to nineteen to fourteen days later. Agglutinins are found to be present in the blood from eight to twelve days after the injection and we do not expect typhoid agglutinins in a typhoid patient's blood, until after ten days of the disease have elapsed. Futhermore, it is known that antitoxins, bactericidins and agglutinins can be enormously increased by correct interspacing of injections and proper dosage. Wright himself has called attention to the value of determining the different substances in immunity before injections are repeated. Opsonins, according to Wright and others, increase relatively early, and do not remain increased for long periods, so that injections are made at short intervals when the opsonic index issued as an indicator. Now if the injections are made before the bactericidal and other protective substances have increased in amount, several negative phases may be superimposed on each other and the protective substances may be much

decreased. Moreover, before immune substances are formed the body cells are hypersensible. These conditions may account for the formation of the furuncle following immediately upon the second injection. Inasmuch as the value of opsonins as a protective substance is not certain it probably would be better to actively immunize an individual according to the older methods and inject killed cultures at intervals of from ten to fourteen days. By this method some good results have been produced, especially in staphylococcus infections.

FUTURE OF OPSONINS AND BACTERIAL VACCINES.

As the method of determining the opsonic index stands today it is of questionable value in diagnosing or treating bacterial diseases. Opsonins may play no part in immunity; on the other hand, they may be quite important, and we are lacking in comprehension of their value and their determination. Efforts should be made to study them, especially is this true since Muir and Marin have found that there are normal opsonins, which are thero-labile and immune opsonins which are thero-sable, and Russell has found that there are specific opsonins.

The treatment of the bacterial diseases by killed cultures ought not be cast aside, because of the unreliablity of the present method of determining the opsonic mind. It seems that the injections of killed cultures, has been both of prophylactic and curative value. The curative value is probably limited to the treatment of chronic diseases, because time is required to actively immunize. Moreover this method may be of especial value in the treatment of infections due to species that have many varieties, for here the individual may be immunized to the special organisms causing his disease. Injections of killed cultures will not cure all infections and many infections may be required in some cases.

Credit is to be given to Wright, not for the discovery of the method of immunization by the injections of killed cultures, but for its revival; and the employment of this method of inducing immunity and treating bacterial infections ought never to be called "immunization or treatment by opsonins."

SCALDS.—For scalds an application of glycerine is most useful. Strips of linen or lint, well soaked in glycerine, gently laid over the scalded skin immediately after the accident, will afford relief from pain and hasten a cure.

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EDITORIAL

Medical Progressiveness in South America.

THE scientific world has been waiting for nearly two years for a detailed scientific report of the relief work done in San Francisco after the great earthquake and conflagration which nearly destroyed that city in early 1906. We have prided ourselves as Americans in the assurance that we are the most progressive people of the world, knowing that that calamity was one which must have been rich in details which would excite the interest of the whole scientific world, we have awaited the report with some impatience at the delay. Our impatience and vanity in American medicine have lately had something of a jolt in discovering that our Latin-American neighbors, the Chileans, who suffered a similar calamity at Valparaiso about two months later than that at San Francisco, have effectively handled such a trying situation and have made a detailed report which was in the hands of the interested public last August. Through the courtesy of Dr. Geo. Homan we have had the privilege of going over this report, and we are constantly surprised that our preconceived notions of Chilean conditions and Chilean education were so at fault; it is a masterly witness for the ability of Chilean medicine and Chilean scientific progress.

The relief work was organized at Valparaiso under the leadership of Dr. José Grossi, surgeon-general in the Chilean army, organization was accomplished as by magic and its effectiveness was superb. The report contains a vast amount of information similar to that which we would have been pleased to have had from San Francisco, but which has, as yet, failed to materialize. In his last paper in the Journal of the A. M. A. (Jan. 4) Dr. Senn quotes from this report many of its more interesting details, and we

would reproduce them as he has presented them:

"The exact number of deaths could not be ascertained, as many of the corpses remain hidden under the debris of large collapsed buildings, especially under the ruins of one of the largest churches. Fortunately, there was no one in the ruined Victoria Theater.

"Some estimate the number of dead as high as 7,000, but Dr. Grossi gives the figure as 1.33 per cent of the population, estimating the latter at 150,000. This would make the number of dead 2,000. He compares this estimate with the statistics of the San Francisco earthquake in which the mortality was 452, or 0.12 per cent of the population of that city, figuring the latter at 350,000.

"The number of those wounded or made ill by the immediate or remote effects of the earthquake exceeded 10,000. There were 776 patients suffering from wounds of the head; 44 from wounds of the neck; 201 from wounds of the arm; 634 from wounds of the hand; 124 from wounds of the shoulder; 96 from wounds of the trunk; 402 from wounds of the leg, and 270 from wounds of the foot. The cases of fracture involved the following bones: Cranium, 142; bones of the hand, 18; shoulder, 10; trunk, 50; leg, 35, and foot, 14. The luxations involved the arm 4 times, the head, 7 times; the shoulder, 12 times; the leg, 3 times; and the foot, 12 times. Among the injuries was a large proportion of contusions divided as follows: Head, 322; neck, 31; arm, 59; hand, 9; shoulder, 1; trunk, 138; leg 96, and foot 75. Only 27 amputations and one resection were made which speaks well for the conservative treatment of the wounded.

"Prompt action on the part of the authorities, who placed Dr. Grossi in charge of the wounded and sick, was the means of preventing much suffering and of saving many lives and limbs. A temporary hospital was erected, and this, with the existing hospitals, provided ample hospital space, while 11 dressing and first-aid stations, located where they were most needed, furnished prompt treatment for those who required care outside of the hospitals.

"A large corps of military surgeons, civilian practitioners and medical students from Santiago volunteered their gratuitous services and did excellent work under the direction of Dr. Grossi. The Alcalde of Valparaiso, at the termination of Dr. Grossi's services, presented him with a flattering testimonial for his successful management of the trust imposed on him, and I am sure that all the sufferers from the earthquake and every citizen of Valparaiso would most heartily endorse the document.

"The whole number of patients who received medical aid was 11,277. Of these, 4,836 were surgical and 6,441 medical cases; 751 received hospital treatment and 10,526 were cared for at dressing and first-aid stations, at dispensaries or at their homes.

"Two physicians and four medical students had in charge the hygiene and sanitary part of the relief work, which consisted in disposal of the human and animal cadavers, and the disinfection of localities where decomposing human or animal bodies were lying or buried under the debris of collapsed buildings.

"The most prevalent diseases which followed in the wake of the earthquake were bronchitis, pneumonia, rheumatism, influenza, dysentery and typhoid fever.

Rat Extermination.

WHETHER the bubonic plague is spread by the rat or to the pulex of the rat may still be a debatable question, but it is established beyond question that the rat plays the important role in its continuance and dissemination. The extermination of the rat is occupying the serious attention of oriental governments, China, Japan, the Philippines and India are all awake to the menace of his presence and, now that the plague has gained a foothold on our Pacific coast, California is attempting to awaken the public to the necessity of extermination. Stranger things have happened than that the plague should progress Eastward, even to the Atlantic. If it does the rat will have been the common carrier. Some months since certain citizens of St. Louis appreciating the pest of rats which infest all sections of the city attempted to inaugurate a crusade of extermination, the matter was treated by the local lay press as a subject for humorous comment and for caricature; it excited no interest in the medical profession and was treated with indifference by the general public, it is needless to say that it was of no effect, yet it was one of the most important measures for the preservation of health that could have been promulgated, and it had commercial aspects which should have attracted interest. It now seems probable that St. Louis will not interest herself in rat extermination until we are confronted by the same problem as that existing in San Francisco; a work which might be accomplished without danger and almost without expense under present conditions would be fraught with a maximum of both should cases of the bubonic plague make their appearance here. The plague is

making its way Eastward, it is on the Pacific coast of both North and South America, the most strenuous of scientific effort has failed to keep it from the American Continents, and the only barrier can be effectively raised against it will prove to be anticipatory precautions, such as rat extermination and careful civic hygiene. These should be undertaken by even the smaller communities, but are especially imperative in the larger cities where conditions especially favor the spread of such diseases.

Another menace which goes hand in hand with the plague is the Asiatic cholera; the connection is not clear but health reports from the Orient show it to be true. Shall we await their arrival? Or shall we try to hinder their coming?

LOCAL MEDICAL NEWS

Dr. Frances L. Bishop has removed her office to 4271 Washington Avenue.

Dr. C. F. Pfingsten of this city has been doing some months of post-graduate work in Europe. He is at present in Berlin.

The President and Council of the St. Louis Medical Society are working on committees and plans for the year's work. The society never has had so promising an outlook.

The opening of the new Metropolitan Building, at Grand and Olive, has brought about a considerable change in medical addresses, as the building will have a considerable number of medical tenants. The Interstate Medical Journal now hails from the Metropolitan.

The "Indefatigable Dr. Gilbert Cullen.—Many of readers will remember that some years since a regular contributor to the Fortnightly was Dr. Gilbert I. Cullen, of Cincinnati. Dr. Cullen has been for some years connected with the Health Department of the Philippines. The last quarterly report of Director of Health Heiser contains the following, which is of great interest to Dr. Cullen's friends: "During the early part of July cholera suddenly made its appearance in Carigara, Leyte, and prevailed for several weeks, the number of cases averaging about ten per day. Owing to the indifference of the local officials, the instituting of active measures against the epidemic was considerably delayed and it was only through the indefatigable efforts of District Health Officer G. I. Cullen, with the support of the governor of Leyte, that the progress of the disease was checked."

A fecal fistula may be made to heal more quickly by the application of the actual cautery.—Jour. Am. Surg.

Officers of the Missouri State Board of Health for 1908.—Our State Board of Health has perfected its organization for the year with Dr. A. H. Hamel, of DeSoto, president; Dr. Ira W. Upshaw, St. Louis, vice-president, and Dr. J. A. B. Adcock, of Warrensburg, secretary.

Medical Library.—We have lately received a detailed report of the Medical Library of the Morgan County (Ill.) Medical Society. The library now contains 1729 volumes and subscribes for a number of the foremost medical journals of the country. Dr. Carl E. Black, who has frequently contributed to our pages, is librarian.

An Operation for Appendicitis in Midocean.—The Cunard liner Panuonia, while on her way from the Mediterranean to New York, was stopped for an hour in midocean to permit the surgeons to perform an operation for appendicitis on a member of the crew. The operation was performed by Dr. J. Fraser Orr, ship surgeon, who was assisted by Dr. Torok, of the Hungarian Government. The sea was running very high and the vessel rolled badly, but the operation was entirely successful, although it took one hour to complete it.

Medical Society of the Missouri Valley.—The spring meeting of this society will be held in Lincoln, Neb , March 19 and 20, under the presidency of Dr. W. F. Milroy of Omaha, and the program is now open for contributions. Titles should be sent to the secretary early, as all papers will appear on the program in the order in which the titles are received, and the limit will be twenty-five papers. The call for abstracts of papers will be made on February 15, and no paper will appear on the program unless an abstract has been furnished by the author in ample time for publication. The profession cordially invited to attend and take part in the discussions.

If not a member, send in your application to the secretary, and become a member of the most wide-awake medical society in the middle West. No time is wasted in jealous bickerings; no society "politics" to interfere with its progress; true scientific advancement is the slogan, and the success of this association, which is independent in character, is indicative of the broad culture and unselfishness of the men who comprise its membership. Initiation fee, $1.00; annual dues, $1.00.

Chas. Wood Fassett, M. D., Secretary,
St. Joseph, Mo.

MEDICAL PROGRESS

Comprising the Regular Contributions of the Fortnightly Department Staff.

INTERNAL MEDICINE

O. E. LADEMANN, M. D.

Physiologic and Clinical Observations on the Alimentary Canal by Means of the Roentgen Rays.—Pfahler (Jour. A. M. A., Dec. 21, 1907) holds that no case involving a chronic ailment of the alimentary canal is completely investigated until there has been a Roentgenologic examination by a competent man. The following are his conclusions: 1. The Roentgen examination will demonstrate obstructive diseases anywhere along the alimentary canal, and much information as to the character of this obstruction can be obtained. 2. The Roentgen method of examination is probably most useful in the study of the stomach. By this means size, form, position, motility and mobility and the effects of massage, respiration, abdominal contraction, peristaltic action and food can be studied. 3. The normal stomach is slightly oblique in the standing posture. Approximately, its upper two-thirds is vertical and the lower third is nearly horizontal. Essentially, the pylorus must be on a level with the lower pole. Its lower pole is usually an inch above the umbilicus, but moves downward when fully distended. The stomach is normally a very movable organ, as is shown by the fact that about two-thirds of it cross the median line when the patient lies on the right side. When distended with food the pylorus is carrid downward and to the right. There is no difference, the author believes, between the normal stomach of children and the normal stomach of adults in the standing or upright posture. 4. The respiratory movements cause the upper pole to move to the extent of the movements of the diaphragm. The lower pole moves from one-half to one inch between forced inspiration and forced expiration. With deep inspiration, the fundus is increased in diameter and the pylorus moves to the right. 5. The contraction of the abdominal muscles will cause the stomach to rise from one to five or six inches, depending on their strength and degree of ptosis. However, in extreme gastroptosis the stomach may lie below the elevating force of the contraction. 6. These abdominal contractions may be used to mix the food in the stomach. If a person eats an ordinary meal and then takes an ounce of bismuth it can be thoroughly mixed with the food in minute or two, and then studied with the rays. 7. These abdominal contractions seem to stimulate the peristaltic movements. Therefore, they assist in emptying the stomach by rising it so that it serves as a reservoir, by removing the obstruction which is caused by the kink in the duodenum and by simulating the peristaltic movements. 8. These contractions cause not only the stomach to rise, but the entire abdominal viscera. The lower portion of the chest expands and the diaphragm rises. 9. The reverse conditions develop when the abdominal wall is relaxed. In other words, the tendency in a normal person to slanchnoptosis may be seen when these walls are relaxed. 10. The writer, therefore, believes, first, that the abdominal wall is the main support of the abdominal viscera; second, that the phthisical chest may be secondary to the descent of the viscera; and third, that the most important element in the treatment of the gastroptosis and the phthisical chest is the strengthening and toning of the abdominal walls and the correction of posture. 11. In severe grades of gastroptosis the portion of the stomach that rests below the level of the pylorus serves as a retention sac, but the point of actual obstruction to the passage of food is a kink formed in the duodenum about one inch from the pylorus, where it is firmly attached to the spinal column. The food lying between this kink and the pylorus is usually separated from the food of the stomach by a sharp and regular line. This will serve as a differential point between this form of obstruction and that cause by carcinoma of the pylorus. 12. The Roentgen rays are of value in collecting additional information in the diagnosis of carcinoma of the stomach, but must not be depended on to make an absolute diagnosis. 13. When a supporting bandage is applied in the treatment of gastroptosis, there should, if possible, be a Roentgenologic examination to determine whether it is properly applied and whether it is serving its purpose. 14. A moderate gastroptosis may be present and not produce any symptoms as long as the motility of the stomach is good. If, however, the motility of the stomach be disturbed by some intercurrent cause, then symptoms will be produced. 15. The Rentgenoscopic and the Roentgenorgaphic method of examination each has its advantage. Roentgenoscopically, we study the motion of the viscera, while Roentgenographically, we make accurate records and often obtain finer detail. 16. The Reontgenoscopic method is a dangerous procedure to the operator, unless he is properly protected, and even then the amount of exposure should be reduced to the minimum. 17. The bismuth-kefir mixture (bismuth subnitrate 1 ounce, and kefir 1 pint or more) is the best medium to render the alimentary canal opaque, be-

cause it is easily digested, holds the bismuth in suspension almost perfectly, and because it tends to counter balance the constipating effect of the bismuth. 18. The esophagus can best be studied by oblique illumination. Peristaltic movement can be seen carrying the food downward. Solids are likely to lodge for a short time at the level of the arch of the aorta, but pass quickly through the cardiac orifice. A swallow of liquid, on the other hand lodges in the lower third of the esophagus for a period of about seven seconds before all of it passes into the stomach. It is probably detained at this point the by sphincteric action of the cardiac orifice which only allows the liquid to pass in slowly. The capsule drops through probably before the sphincter has had a chance to act.

Improved Carbolic Fuchsin Stain for Tubercle Bacillus.—Le Baron (Jour. A. M. A. Dec. 21 1907) proposes the following improved technic for staining the tubercle bacillus: The staining solution is made by saturating methyl alcohol (97 per cent) with fuchsin and adding 5 per cent of carbolic acid. This fluid will stain the tubercle bacilli in the sputum in four minutes without employing heat. As the stain is dissolved in methyl alcohol, preliminary fixation is really unnecessary, but with some sputum a smoother field is obtained by a light fixation in the flame. The specimen is decolorized and counterstained in the usual manner. The tubercle bacilli are stained deeply and the field is unusually clear.

The Medical vs. Surgical Treatment of Gastric Ulcer.—Musser (Am. Jour. of the Med. Scs., Dec., 1907) discusses at length both aspects of treatment offering in evidence many statistical reports. He says gastric ulcer is a medical disease. Gastric ulcer with complications and sequels is sometimes a surgical disease; if perforation occurs it becomes a surgical affection; if repeated and chronic, it is a surgical affection. If the ulcer is productive of perversion of secretory function alone, it remains a medical affection. Inasmuch as hyperchlorhydria is in part a neurosis, the secretory function can be balanced chiefly by medical, dietetic, and hygienic measures. Even if pyloric spasm attends the hypersecretion and hyperacidity it does not necessarily take the case beyond medical care. It is wrong to submit such patients to operation, unless motor disturbances become prominent. If the symptoms and physical signs of retention from obstruction, dilation, hour-glass contraction, or adhesions supervene and persist, the case is surgical. If the symptoms of gastric ulcer become continuous in spite of medical treatment and incapacitate or threaten life, and if hemorrhage recurs and secondary anemia arises, it is a surgical disease. Such cases, however, are always attended by organic sequels. The extraordinary frequency of chronic gastric ulcer with sequels requiring operation is due to neglect of the treatment of an ulcer in its incipiency. Statistics show that most patients are operated on between the thirtieth and fortieth year and have an ulcer history of five to ten years' duration. What, as a medical attendant, should one do with a case of gastric ulcer? From personal experience and a study of recorded cases, Musser says, if it is a simple uncomplicated ulcer, employ rest, at first absolute and later modified, a suitable diet, and the drugs indicated, for at least four months. If attended by an organic complication, as pyloric obstruction from thickening or from adhesion, or by dilatation, if extreme, or by hour-glass contraction, surgical measures are in order. If perforation exists there should be no delay in operating. If hemorrhage exists operation is rarely necessary, and if acute, not unless the peril of hemorrhage outweighs that of operation — a nice estimation of values. If hemorrhage is persistent and gives rise to anemia operation is indicated. Under any circumstances and until cure is established keep the patient in touch with a surgeon. The physician should never assume the attitude of a distinguished physician who congratulate himself that he did not ask a surgeon to see a case because it had features like those of pancreatitis, a suspicion borne out by autopsy which showed such lesion. It should be the duty of the physician to associate with himself a surgeon, to the end that accidents may be taken care of at once, and organic sequels relieved. The final very serious duty is the selection of the surgeon. One who has good technical ability and has had considerable experience in gastric surgery should be selected. The operations even of gastroenterostomy is not trivial and requires the best service at command. After the surgical procedures of necessity are carried out the patient must be treated medically. Medical treatment must be continued over a period of four months at least; hygienic and dietetic treatment over a period of years. A patient who has had gastric ulcer should, for all time, observe the hygienic and dietetic rules which keep digestion to an approximately normal state, which prevent anemia, and which, above all, so conserves the nervous system as to prevent neurosis.

Medical Treatment of Gastric Ulcer.—Stockton (Am. Jour. Med. Scs., Dec., 1907)

summarizes the medical treatment of gastric ulcer as follows: Attempt to secure a calm mind, a quiet nervous system, and improvement of the general health. Make a positive diagnosis, begin treatment early, and carry it out with painstaking attention to details for a long time. Obtain general rest. In some cases feed the patient sufficiently, but discreetly; in others, starve the patient for a period, depending for support upon frequent, small enemas of normal salt solution. For the control of hemorrhage, in addition to rest, one may succeed by local treatment through the stomach tube, using ice water, or adrenalin solution, followed by gelatin water. In irritating hypertension and spasm of the stomach, in addition to suitable drugs, use external application according to von Leube, or the equivalent of these. Finally continue treatment long after an apparent cure, and study the stools for occult blood; but we should also remember the dictum of Bettmann, that "it is not alone the question of how long treated, but how well treated." Statistics mean little, because of uncertainty of method and the faulty detail so often observed in the treatment of this disease.

OTOLOGY.

A. F. KOETTER M. D.

Keratosis Obturans.—(Baurowicz-Krakan, Monatsschrift fuer Ohrenheilkunde.)—By keratosis obturans author means an accumulation of layers of epidermis in bulbous formation, which finally act as stoppers in external canal and lead to disturbance of the hearing. He differentiates between keratosis otica externa and keratosis otica media in which also the proliferation of layers of epidermis the formation of solid masses and absorption of bone occurs, the name cholesteatoma for the latter, he rejects as not proper, as we do not deal with a swelling, as the ending oma would indicate. In the absence of symptoms of inflammation of the external skin of the canal or sensations on the part of the patient, besides the impaired hearing, be it pain, itching or moisture, author does not consider a chronic inflammation as the cause of the desquamation process. He classes this disease with the rare occurences and reports seven casesthat he observed. In only one case a chronic suppuration of the middle ear with destruction of the membrane and the ossicles, existed. This had desisted and a solid scar divided the external canal from the middle ear. After years there occurred a dense closure of the external canal with layers of epidermis scales. The other six cases concerned patients who had had no previous ear trouble. Author attempted to give a clinical picture of the disease in which there often occurs formation of granulations in the canal, and in one case perforation of the drum membrane. The last case showed such excessive accumulations of epidermal masses and such destruction in the canal that it required weeks of treatment to heal it. The extraction of the plugs is done either by syringing or with instruments.

Deafness Due to Compression of the Tube Caused by Fibroma of the Middle Turbinate.—(Suné Medon, Barcelona.)—The cause a very vascular, multilobular fibroma, with tendency to sarcomatous degeneration, the size of a pigeon egg. Extraction through the nostril which was accomplished with difficulty. Excessive hemorrhage. Galvano causis of the place of insertion of the tumor. In eight days after one catheterization of the tube the hearing was improved so markedly that a watch, not heard before the removal of the tumor, could be heard the same as in the healthy ear 80 cm. on the twelfth day.

Headache, Its Cause and Treatment from the Standpoint of the Otologist.—(Seymour Oppenheimer, New York, Amer. Jour. of Surgery.)—Barring the intracranial complications in middle ear suppurations headache is a comparatively rare symptom in diseases of the ear, occurring less frequent than in diseases of the eye and nose. In affections of the external ear headache is of little importance, accumulations of cerumen with dermatitis on account of the severe pressure causes uncomfortable sensations in the head, which especially in neurotic individuals may lead to pronounced headaches. The connection of the latter with accumulation of cerumen may be cleared up by the removal of the inspissated mass. Oten we have a diffuse or localized headache in furunculosis of the external canal. If headache is due to narrowing of the tube following catarrhal changes of its mucous membrane in hypertrophy of the turbinates, adenoid vegetation and other nasopharyngeal affections, relief will follow the catheterization, to recur when the tube becomes occluded again. A removal of the cause of the stenosis of the upper air passages is necessary. More difficult is the establishing of a connection between headache and ear disease in otosclerosis, adhesive middle ear inflammations, and similar processes, and this can best be explained by the result of the therapy, especially by the local therapy, the general treatment by use of analgesics is of little value. In acute middle ear inflammation with effusion into the tympanic cavity, the pain in the ear may radiate to the head and assume a severe character, especially when

the pus does not drain properly and cause severe pressure. If the headache persists after paracentesis it indicates an extension of the disease to the mastoid process. If headache occurs in the course of a chronic suppuration one may think of cerebral complications, if the accumulation of pus or cholesteamatous masses cause increased pressure, especially syringing, produce the pain.

The Suction Method in Middle Ear Suppurations.—S. Preobiaschenski uses a rare factor made of a rubber bulb, hose and olive shaped ear piece. Originally he only applied the suction treatment after paracentesis, but soon used it in all forms of suppuration, acute as well and chronic, as gained the following results: 1. The suction treatment frees the middle ear of secretion and removes thereby retention of pus and desquamation. 2. It prevents retraction and agglutination of the membrane remnant with the promontorium. 3. It favors closure of paracentesis incision. 4. In small and highly situated perforations it replaces the paracentesis. 5. In some cases may prevent opening of the mastoid. 6. An ideal dry treatment may be used in connection with suction therapy.

A Large Quantity of Radium.—Cabel dispatches announced that the Imperial University Laboratory at Vienna has succeeded in separating three grams, or about forty-six grains, of radium from ten tons of uranium pitch blende. This large amount of the expensive element will be used in studying the physical and chemical properties of what is as yet a little known substance. Thus far, radium is of great scientific interest but of little practical use. It is used to a limited extent in the treatment of certain forms of ulcers.

Acute Cold.—There are five hundred ways to cure a cold. Some of the drug store cures offer to do the job in one day. The most common remedies are quinine, aconite, calomel, whiskey, Dover powder, and hot lemonade. These remedies, some of them at least, may be serviceable if judiciously used. If one keeps up good elimination from every source colds will seldom occur. This suggests something in the way of proper treatment. To "feed a cold" is ill advised. In treating a cold, too, the vasomotor system needs a good shaking up. Nothing does this better than the cold bath. If you have a patient who really can't afford the luxury of a cold more than a day or so, here is the way to cure him: Keep him in a comfortable room where the temperature is unvarying. Better still, if you can keep him in bed.

The Medical Fortnightly

A Cosmopolitan Biweekly for the General Practitioner

The Medical Fortnightly is devoted to the progress of the Practice and Science of Medicine and Surgery. Its aim is to present topics of interest and importance to physicians, and to this end, in addition to a well-selected corps of Department Editors, it has secured correspondents in the leading medical centers of Europe and America. Contributions of a scientific nature, and original in character, solicited. News of Societies, and of interesting medical topics, cordially invited.

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CLINICAL THERAPEUTICS

A forum of original experience, to which scientific contributions are invited. Responsibility for views promulgate limited to author.

VALIDOL AS AN ANTHELMINTIC—A NEW THERAPEUTIC PROPERTY OF THE REMEDY.

DR. VITTORIO SBORDONE.

(Rivista Intern. di Clinica e Terapia, 1906, No. 15.)

Every physician familiar with the composition of validol (menthol and valerianic acid, will readily understand how it will be found of the greatest value in all cases where a prompt restorative is indicated. Validol, a limpid, colorless liquid, is the menthylester of valerianic acid, containing 30 free menthol.

About a decade ago validol was introduced, and in 1897 first tested by Schwersenski (Therap. Monatsheftel, 1897, Nos. 5 and 6), and according to this author the indications for the remedy are manifold. It is recommended (a) as an analeptic, (b) as a remedy in various forms of hysteria, (c) as a specific

in acute acloholism, (d) as a stomachic, and (e) as a remedy in hemicrania.

The numerous clinical cases in which I have employed the remedy, are of a very dissimilar kind, and I shall select here only such cases as will demonstrate a new therapeutic property of the remedy, namely, its anthelmintic action.

It is a well-known fact that ascarides may be the cause of exceedingly annoying symptoms, especially in children, e.g., itching of the nose, malodorous breath, colicky pains in the umbilical and left hypochondriac regions, voracity alternating with anorexia, nausea, irregularity of stools, arythmia of the pulse, difference in the size of pupils, attacks of syncope, convulsions, disturbances of visions, etc.

Of late numerous articles in many medical periodicals have called the attention of the general practitioner to the multiplicity of symptoms caused by the ascaris lumbricoides, and cases of chorea minor, eclampsia, multiple paralysis, transient facial paralysis, Cheyne-Stokes breathing, pseudo-appendicitis and epileptiform attacks have been mentioned as sequelae of intestinal parasites.

Every practitioner is well aware that after the administration of a vermifuge a large number of ascarides may be expelled, which caused no serious disturbance of any kind, while on the other hand very few ascarides may be the cause of such profound nervous disturbances as to suggest a grave disease of the nervous system.

The toxic theory of helminthiasis is certainly much more satisfactory than the reflex theory. In 1885 Huber first contended that the general symptoms caused by the ascarides were not due to a mechanical action of the parasites, but to a chemical substance secreted by them, and recently Mingazzinni, Chanson and Cao have tried to solve this question by numerous experiments.

My clinical experience of many years leads me to the following conclusions: 1. The main cause of the convulsions in children with worms is to be found in the parasite. 2. It is the toxic rather than the reflex action which causes the disturbances, and this toxicity may give rise to very grave symptoms. 3. The ascarides have not the same toxic energy under all circumstances. 4. In children sudden nervous symptoms of other than psychic or traumatic origin, should always suggest the presence of intestinal parasites, especially in children of the poorer classes. 5. Since these conditions may have serious sequelae, prompt treatment is imperative.

We know that worms oftentimes cause very distressing symptoms, and then again only slight gastro-intestinal disturbances, which do not at all suggest their true origin. In these slight disturbances a few drops of validol will be found of much greater service, than all sorts of concoctions of fennel tea, etc., and in most instances validol will rid the little patients of their complaints not only temporarily, but permanently.

Santonin is apt to produce grave symptoms of intoxication, and should certainly never be administered several days in succession, while validol is absolutely nontoxic, free from all deleterious by-effects and a most efficient vermifuge.

Of the many cases of helminthiasis, which have come under my observation, I should like to record only the following:

I. C. C., 28 years of age, quartipara. July 1st, 1906, soon after confinement, nausea, griping pains in stomach and occasional attacks of syncope. Lochia normal, no rise in temperature, sensibility to pressure over genito-urinary apparatus normal and infection excluded. Opiates, ceroxalate, etc., quieted patient temporarily, but general condition remained unchanged. On the third day I gave validol and patient became quiet almost at once, and after an hour vomited three ascarides. An hour later I again gave her 10 drops of validol, and henceforth the pure-perium was perfectly normal.

II. About the end of last August I visited the four-year-old girl Z., who for some days had been complaining of intestinal disturbances. The relatives had given the child a cathartic oil, but without success; slight fever, general depression and nausea; for several days frequent attacks of epistaxis. On examination I found patient much depressed, mucous membrane of mouth slightly reddened, tongue coated, breath foul, abdomen slightly distended and painful to pressure over ileocecal region, dulness of liver normal, spleen enlarged, diarrhea and tenesmus. During the following day the symptoms became more severe, and in addition vomiting, severe headache and herpes labialis. Stomach did not tolerate even a liquid diet, which was rejected almost at once. The temperature varied between 100.4 deg. F. in the morning and 103.6 in the evening. Although no additional symptoms confirmed my diagnosis of typhoid fever, I adhered to it on account of the onset of the disease, the general condition, the appearance of the oral mucous membrane, the meteorism and the sensitiveness to pressure in the ileocecal region. At first I gave lemonade with hydrochloric acid, but after one week validol in sugar-water (20 drops per day) in order to disinfect the digestive apparatus, stimulate peristalsis and lessen the irritability of the

gastric mucous membrane. By checking the decomposition of food validol prevents the formation of abnormal products of decomposition. The first symptoms to improve were the nausea and sensitiveness to pressure in the ileocecal region; the evening temperature too became gradually lower. On washing out the intestines two large ascarides were expelled, and I now concluded that these intestinal parasites were the chief cause of the sickness. I increased the daily dose of validol from 20-30 drops, since I appreciated from past experiences the value of this agent as a vermifuge. Additional large, dead ascarides were expelled, mostly 5-8 at a time. With the epulsion of these parasites the condition of the girl improved markedly; the temperature dropped rapidly after a few exacerbations, and the headache disappeared; but small doses of validol were continued for some time in order to prevent the possible development of other ascarides.

III. T. Christina, 9 years of age. After three day sof general depression, anorexia and headache there occurred a sudden rise in the temperature with chills, vomiting and severe headache. On my first visit I found a temperature of 103.1 deg. F., disturbed sensorium, coated tongue, foul breath and slight pharyngitis. Heart and lungs normal, but adbdomen slightly distended with sensitiveness to pressure on right side and over spleen.

A cathartic caused several liquid, bile-colored stools, but the temperature and condition of abdomen remained unchanged. The relatives informed me that in former years patient had suffered much from worms. I ordered 30 drops of validol per day in three divided doses and lavage of the intestines with boiled water several times a day. After expulsion of numerous ascarides, the temperature soon became normal, the concomitant nervous symptoms disappeared, the abdomen became soft and pliable and the child recovered completely in a few days.

IV. M. Luigi, 12 years of age. Parents are rather uneducated farmers, both suffering from nervous disorders. Patient is a frequent sufferer from intestinal disturbances; when two years of age he is said to have had convulsions and helminthiasis, and these have recurred from time to time. In these attacks patient drops to the floor suddenly, grinding his teeth and foaming at the mouth. During one of these attacks several ascarides were expelled by the mouth; I ordered calomel and santonin and several ascarides were passed in the stools. To relieve the patient, if possible, of his pseudo-epilepsy, due to intestinal parasites I ordered 20 drops of validol daily in two doses before meals, and since this treatment the boy has not suffered one other convulsion, is in good spirits, has a splendid appetite and is able to perform his agricultural duties.

V. E. S., 4 years old, frequently troubled with helminthiasis. When I saw the patient first, he complained of very severe colicky pains. I ordered embrocation of abdomen with a lukewarm diluted solution of validol and 6 drops internally on a lump of sugar. The pains ceased almost instantaneously and after two hours several ascarides were passed in the stools. Small doses of validol were continued for several days and more ascarides expelled.

VI. V. C. Pasquale, second child of rather aged but healthy farmers. At the age of 6 months the boy suffered from gastro-intestinal and bronchial catarrh; had the measles at two years of age. Last August, after roaming through the fields in a very hot sun for a prolonged time, the child was suddenly taken with high fever, diarrhea, vomitin spells and convulsions. On examination I find patient's position in bed rather characteristic. The head is bent backward, the arms slightly flexed at the elbows and the legs at hip and knees; rather pronounced contracture of joints and stiff-neck; gnashing of teeth, photophobia and dilated pupils; tongue heavily coated, breath malodorous, abdomen distended and stools of a greenish color. I made the diagnosis of either meningitis, taking into consideration the onset of disease and the overexertion in the excessive heat, or pseudo-meningitis caused by intestinal autointoxication, due possibly to helminthiasis. Under all circumstances the use of validol was strongly indicated, and I ordered 20 drops per day in three divided doses. Two days later the aspect of the disease was changed as if by miracle after twelve ascarides had been passed by the bowels in a single day; the fever decreased rapidly and the nervous symptoms disappeared quickly. Course and termination of the disease pointed conclusively to auto-intoxication due to ascarides.

VII. B. Frederigo, 4 years of age, healthy and strong, good family history, no serious previous sickness. Passes worms frequently, which, however, do not seem to cause any gastro-intestinal disturbances. Several nervous symptoms, e.g., gnashing of teeth, partly closed eyes during sleep and night terrors point to the possibility of intestinal parasites. I ordered validol in daily doses of 15 drops in sugar-water. The expulsion of a large number of ascarides marked the end of the boy's illness, who has not suffered a similar attack since. No more ascarides have been expelled and the general condition has remained excellent.

VII. A. Mathias, 8 years old, farmer's son; father, mother and brothers healthy; measles at 3 years of age, otherwise always in good health. Parents say that after an error in diet the child suddenly complained of severe colic; he also suffered from diarrhea, fever, anorexia and general depression. Parents administered laudanum, which caused the diarrhea to cease, but temperature and other symptoms became worse, and during the third night of the disease severe convulsions and partial unconsciousness occurred. On account of these symptoms I was called in. Temperature 102.5 deg. F., pulse and respiration accelerated, sensorium dull, pupils dilated, muscles rigid, pronounced stiffness of neck. No cardiac or pulmonary symptoms, size of liver normal, spleen enlarged, tongue coated, abdomen tympanitic. No vomiting, no stools for two days; nourishment has consisted of water and a few spoonfuls of milk. It was impossible for me to arrive at a definite diagnosis, but considered Baglivi's famous words quite applicable "when in doubt think of worms in children, of suppressed monthlies in women, of syphilis in men." I ordered daily doses of 20 drops of validol and had the satisfaction of seeing all symptoms disappear in three days, after a large number of ascarides had been expelled following the administration of a cathartic. Validol was continued as a prophylactic for several days.

The anthelmintic action of validol is a new property of the product, first discovered by myself. It is the vermifuge par excellence, and unlike other anthelmintics absolutely harmless. I have given it to children of very tender age for a prolonged time, and never observed any untoward by-effects, while its anthelmintic action was always very prompt.

Before administering a vermifuge it is often necessary to give a preparatory treatment by depriving the parasites of as much food as possible. Such preparatory treatment often has its disadvantages, since by completely emptying the intestines, the intestinal mucous membrane is rendered more susceptible to the toxins of the parasites as well as the toxic action of the vermifuge. The validol however, may be given without fear of untoward after-effects, and its use as the standard anthelmintic will soon become more extended.

Owing to the great infrequency of primary tuberculosis of the bladder, it is important in every case in which this disease is suspected to look for a tuberculous focus in some other part of the urogenital tract.—International Jour. of Surgery.

MEDICAL MISCELLANY

Illinois Cigarette Law Inoperative.—The Supreme Court has declared the anti-cigarette law passed by the last Illinois Legislature unconstitutional on technical grounds. The law as passed contained provisions not enumerated in its title and did not prohibit the sale of cigarettes containing "pure tobacco."

When making digital pressure for the arrest of postpartum hemorrhage the aorta should be pressed directly against the spine with the ulnar side of the clenched hand. The pressure should be shifted over the area occupied by the aorta, so as to avoid any damage to the sympathetic nerve plexus.—International Jonrnal of Surgery.

To Stop Vaccination in Illinois.—At a recent meeting of the Chicago Osteopathic Association resolutions were adopted declaring against compulsory vaccination. After saying that there is no law in the State compelling vaccination, the organization ordered that every possible means be directed against "the unlawful and unwarranted powers which these boards of health have arrogated to themselves." An appeal to the legislature is advised.

Vinegar an Antidote to Phenol.—Dr. Carleton, of New York (Practical Druggist), has found the above to be true. Applied to the surfaces burned by the strong acid, it at once checks the bleaching and anesthesia and prevents the formation of eschar. It is also serviceable when the poison has been swallowed. In this case the vinegar should be given freely mixed with an equal volume of water and the stomach washed out as quickly as possible.

Longevity in Iceland.—In Iceland, according to the census of 1905, the people live on an average to the age of 61.8 years, which is nearly double the mean duration of life as it was computed a generation ago. Sweden and Norway are also very healthful countries; the mean duration of life in the former being 50.02 and in Norway 49.94 years. It is doubtful if any part of the world can exceed Iceland with regard to longevity. Perhaps this is because the lives of most of its people are simple and unexciting;, there is very little in their lives either to sitmulate or depress the pulse. However, states the Sun, the summer tourist is reaching the island in large numbers every year, and it is now tied to Europe by a submarine cable. The next census may show the effect of these inovations upon Iceland's longevity record.

WOMEN NURSES FOR THE NAVY.—On the recommendation of Secretary of the Navy Metcalf and Surgeon-General Rixey, a bill is to be introduced in Congress providing for the establishment of a corps of women nurses for the navy. They will be stationed at the various hospitals at naval stations and are intended to form the nucleus of a female nurse corps for service on hospital and ambulance ships in time of war.

"SENSE AND SENSIBILITY."—The February Century promises a feature of unique interest and importance in the first of a series of essays by Helen Keller entitled "Sense and Sensibility," in which this remarkable girl gives an intimate and detailed account of her experiences and emotions in an existence where, deprived of the senses of sight and hearing, she is restricted to the three other senses of touch, taste, and smell. The essays are said to be remarkable for their beauty of thought and literary expression.

AUSTRIAN MEDICAL STUDENTS.—In Austria, according to an exchange, there were last term 3,106 students enrolled in the six medical schools in that country. Of this number 132 were women. The Vienna school is the largest, with 1,440 students, followed by Prague, with 587. This is an increase of 2 per cent in the number of students, but there were 7 per cent fewer diplomas given than the previous year. There are only 12,000 doctors in Austria, with a population of 25,000,000, so that the proportion of patients is 2,100 for each physician.

THE FIFTH PAN AMERICAN MEDICAL CONGRESS will be held in Guatemala, Central America, the second week in August, 1908. Guatemala is situated on an elevated plateau which is comparatively cool, and the weather will probably not be uncomfortable. The trip from New Orleans or from New York by steamer to Porto Barrios is an agreeable one. The arrangements for the trip will be in the hands of the chairman of the committee on transportation. There will be no charges for transportation within the Republic of Guatemala. The Government and the people of Guatemala are taking an active interest in the meeting, and are doing everything in their power to make it a great success. Further information regarding the congress can be obtained from Dr. Ramon Guiteras, 75 West Fifty-fifth street, New York, who is the secretary of the International Executive Committee.

THE PRESERVATION AND TREATMENT OF CORKS.—The large and influential Cork Industrial Association of Germany has issued the following instructions to its members on the storage and treatment of corks: First, the corks must be stored in a dry room. If this be done, then the cork will absorb moisture from the air and thereby become mouldy, which will impart an unpleasant odor and taste to liquids coming in contact therewith. Second, the corks must not be soaked in warm water before use, and especially not in hot water; for this impairs their elasticity and dissolves some of the tannic acid of the cork; the latter is especially the case where hot water is used. The bottling machine will drive some of the tannic acid into the contents of the bottle. Third, the proper method to pursue for softening corks is the following: Two hours before the corks are to be used they are placed in a willow basket, whose bottom is covered with clean packing cloth, and then thoroughly moistened with pure cold water. This operation is carried out with a sprinkling can, and should be repeated at intervals of half an hour; for each sprinkling the basket should be thoroughly shaken. Corks so treated close the bottle tightly if the bottling machine is kept perfectly clean. Under no circumstances must the cork be overheated. Fourth, the Association advises its members not to grant any compensation for "bad taste," for, if the above directions as to storage have been observed, the dealer has done all that is possible, and must insist that such rare defects in the corks themselves are due to irremediable causes, or to improper treatment by the bottler and notably from neglecting to keep the bottling machine clean.

MEDICAL SUGGESTIONS

SOOTHING SYRUP WITHOUT OBJECTIONABLE NARCOTICS.—The following should answer all the requirements for a reliable formula for a soothing syrup not containing narcotics mentioned in the pure food and drugs act:

Lactucarium	17.00
Ext. ginger	15.00
Ess. anise	30.00
Sugar	390.00
Hot water	250.00
Sodium bicarb	40.00

Rub the lactucarium with hot water in a mortar. After cooling add the sodium bicarbonate, allow to macerate with occasional agitation for twenty-four hours, then add the ginger and anise to the sugar and shake thoroughly together. Dissolve in the liquid by agitation. When dissolved, strain. Dose, one-half to one teaspoonful.—Practical Druggist.

If possible, drainage should be avoided in operating for tuberculous diseases of the bones, as the insertion of drains encourages the formation of sinuses. Scrupulous asepsis will generally render the use of drainage unnecessary.—Intern. Jour. of Surg.

MASSAGE CREAM.—

℞ Lanoline.....
Almond oil.....
Sulph. precip.....aa 3ii
Zinc oxidi..... 3x
Perfume, violet ext..... 3ii
M. ft. ung.

NOCTURNAL INCONTINENCE.—Dr. J. M. Sandlee says: A simple combination that has given me a reputation far and near in the treatment of diseases of children, is the following for incontinence of urine. I have successfully used this prescription in both acute and chronic cases, and in no case has it yet failed to produce good results. I add four drops of belladonna and four drops of specific nux vomica to an elixir of four ounces of saw-palmeto and corn-silk. Of this, one teaspoonful is given before each meal and at bedtime."—The Therapeutist.

SALICYLATED SUGAR AS A WOUND DRESSING.—G. Meyer (Zentralblatt für Chirurgie, August 7, 1907) has found powdered sugar, containing 2 per cent of salicylic acid, very useful in treating recent wounds. He sterilizes the sugar at 140 deg. C., stirring it constantly in order to keep the powdered form, and adding the salicylic acid, so as to thoroughly mix the powders. When dusted on freely, wounds assume a granulating appearance and cicatrize without delay. It is regarded as contraindicated in impure, suppurating, and bleeding wounds. It should not be applied upon an exposed bony surface, for it may cause necrosis. It is best employed in simple wound, before they have commenced to granulate.

SOME OLD-FASHIONED DAINTIES FOR INVALIDS.—Most modern foods for sick people are all right. We have no objection to offer as regards their usefulness and availability. They are nourishing, and so easily prepared that they are truly a boon to those who are nursing. But a few of the tasteful, appetizing dishes that our grandmothers delighted in when we were young, in those happy days; ah! how their savory odors linger yet in memory, and the taste can never be forgotten. For instance:

The Invalid's Cutlet.—Remove the fat from a carefully-selected cutlet, from the loin or neck of mutton, put it in a stew-pan with a tablespoonful of water, one very small piece of celery, a pinch of salt, and a whiff of white pepper. Stew slowly for two hours, removing every vestige of fat that rises to the surface. The celery should be cut into small dice-shape pieces before adding to the meat. The cutlet will be very tender, and there will be just a little of the most savory, nourishing broth to serve with it.

Stewed Calf's Foot.—Select a calf's foot that has been well cleaned by the butcher; place it in a stew-pan with one pint of milk and one pint of water, pepper and salt, the grated peel of one lemon, and a blade of mace. Let it be slowly stewed, or, better still, baked for three or four hours. If the invalid desires, you may add a little chopped celery when it is nearly done; and half a pint of cream, stirred in just before serving, will improve the taste and make it more nourishing.

Veal Tea with Oatmeal.—One tablespoonful of oatmeal mixed smoothly with one of water; then add half a pint of strong veal tea; let the mixture boil ten miuntes, strain through a sieve, and serve.

Gruel Cream.—A dessertspoonful of fine oatmeal, moistened with warm water and stirred until smooth; now add by degrees nearly one pint of boiling water, stirring all the time, and allow it to simmer for ten minutes. Add a little sugar, or salt if preferred, and three tablespoonsful of cream.

Arrowroot was an old-time delicacy, and was prepared as follows: Mix two tablespoonful of the finest arrowroot with a tablespoonful of cold water, then pour over it half a pint of boiling water, stirring all the time. Put the arrowroot in a tumbler, sweeten with lump sugar, and, if allowed, add a little port or sherry. If wine is not allowed, add a little sweet cream.

Egg and Claret.—Beat the whites and yellows of two eggs separately, mix (also separately) with two small glassfuls of claret or sherry. Eggs are more easily digested in this way than when whites and yolks are beaten together, and there is enough difference in the taste of the two draughts to make them appreciated by a capricious invalid.—Health.

PERSISTENT hemorrhage after the extraction of a tooth is often relieved by the application of trichloracetic acid. If the hemorrhage does not cease after its application, tamponade of the cavity is the next best available means of stopping the flow of blood.—Am. Jour. of Surg.

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Philadelphia, Pa., March 28th, 1907.

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Fat	7.00
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THE BACTERIAL VACCINES AND TUBERCULIN.—The H. K. Mulford Co. has issued a series of Working Bulletins on Bacterial Vaccines, and Tuberculin and Tuberculin Therapy containing information from experts, which are of great interest at the present time. No subject is of greater import, and probably so little understood by the general practitioner, as Tuberculin in the modern treatment of tuberculosis. This is largely due to the fact that information has not been generally available on account of its wide dispersion in medical journals and in different languages, also the lack of knowledge of its proper dosage and the difficulties attending its dilution. These obstacles have been overcome, not only by collecting, translating and impartially epitomizing the literature, and publishing it in the form of Working Bulletins, but by devising a convenient system of Serial Dilutions ensuring accuracy in dosage. However valuable Tuberculin may be as a diagnostic or curative agent, unless it can be made practical to the general practitioner it will fail of its larger usefulness. These Working Bulletins contain full information from competent observers. Advance proofs were submitted to leading authorities before publication. In several instances the Bulletins were personally reviewed by the authors quoted, and the Bulletins are therefore worthy of place in scientific literature. The Working Bulletin System includes the publication of new editions of the Bulletin as information concerning the subjects under investigation shall develop, thus keeping them up-to-date and of practical service to all concerned. Copies of these Bulletins will be furnished upon application to the publishers, H. K. Mulford & Co., Philadelphia.

ANEMIA AND ITS RELATION TO CATARRHAL INFLAMMATION.—No disease is more common than chronic inflammation of the mucous membranes. Doubtless many causes contribute to the prevalence of this malady which spares neither the young nor the old, the rich nor the poor, the high nor the low. Prominent in its etiology, however, are sudden climatic changes, the breathing of bad or dust laden air, bad hygiene in personal habits, and bad sanitary surroundings. These factors all singly or collectively, tend to lower the vitality of the whole human organism, and as a consequence the cells throughout the body perform their various functions imperfectly, or not at all. The quality of the blood becomes very much lowered, with the result that tissues that have important work to perform, do not receive sufficient nourishment and so falter from actual incapacity. The red blood cells are reduced in numbers and the hemoglobin is likewise diminished. Because of the blood poverty the digestive process is arrested, nutritive material is neither digested nor absorbed, and a general state of inanition ensues. It is not surprising under these circumstances, therefore, that chronic inflammation of the mucous membranes is produced. These highly organized structures with very important duties to perform naturally suffer from insufficient nutritional support, and the phenomena of catarrh follow as a logical result. Perversion and degeneration of the cells in turn takes place, and more or less permanent changes are produced in the identity and function of the tissues. Appropriate treatment should consist primarily in correcting or eliminating all contributing factors of a bad hygienic or insanitary character. The individual should be placed under the most favorable conditions possible and every effort made to readjust the personal regime. Local conditions of the nose, throat, the vagina, or any other part, should be made as nearly normal as possible by suitable local applications or necessary operative procedures. Then attention should be directed immediately to improving the quality of the blood and thus increase the general vitality. For this purpose vigorous tonics and hematics are desirable and pepto-mangan (Gude) will be found especially useful.